Memo from the Editor

During a recent trip to the Kalamazoo plant of the International Paper Company, we had the opportunity of seeing how paper containers are made. A feature article on the subject will appear in the *American Milk Review* next month. We were particularly impressed with the degree that two-quart containers have spread over the nation. We saw containers being made for dairies in California and for dairies in Massachusetts and Connecticut. To all milk dealers, therefore, we recommend for your attention the article by Martin Blank on the experience of the Los Angeles market with these containers.

N.M.

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HALF GALLON CONTAINERS in the LOS ANGELES MARKET

When the Price Differential Ceased to Exist Sales In the Two Quart Package Took A Tumble

By MARTIN H. BLANK

Exclusive feature AMR

Recently, in California markets, there was introduced a new two-carton carrier for use in merchandising milk packed in paper quart cartons through stores and markets. The introduction of this carrier renewed many of the old arguments as to the justification of half-gallon containers in some of the major markets of the State. A wide difference of opinion prevails amongst the distributors as to whether the over-all lowest cost of processing and distributing milk to consumers can be best achieved by bottling solely quarts for direct consumer sale, or through distributing both quarts and half-gallon sizes. Questions were also raised as to what definite preferences may exist in consumers' minds in regard to purchasing milk in bottles larger than the quart size.

A review of what has transpired in respect to the sale of milk in quarts and half-gallons in the highly competitive Los Angeles market casts some light on these questions. In the years prior to the middle of 1940, when the courts legalized the fixing of retail milk prices by the State of California, the Los Angeles market was marked by violent price swings, and many changes in the manner in which milk was merchandised to consumers. During this period, wide differentials existed between prices of milk sold at retail through stores and on home-delivery routes, and cash-and-carry operations flourished, particularly at dairies located on the main highways. Out of this bitter competitive condition came the introduction into the market of the so-called "gallon and half-gallon jugs" as bargain-sized containers, and by 1939, half-gallon jugs or bottles were widely used by practically all distributors. They were generally retailed to consumers at a price equivalent to one to two cents less than the cost of two quarts.

For a short time, major distributors confined the sale of half-gallons to their retail routes, but soon offered them to stores and markets, since these outlets wanted to be in a position to provide consumers with milk on a lower-cost basis. At the same time that the half-gallon container was assuming importance to the store trade, most distributors were in the process of offering milk packaged in paper cartons, as well as glass bottles, and consumers purchasing milk at stores were rapidly showing a preference for the non-returnable paper container. One large chain organization operating its own milk plant had completely eliminated glass bottles and sold all of its fluid dairy products in paper containers by the middle of 1940. This organization found itself unable to compete for the consumers' milk trade without the half-gallon, unless it went into the handling of glass containers on a large scale. Therefore, in June 1941, when equipment was available for packaging milk in two-quart paper containers, this Company quickly started selling milk in the new package through its stores. Soon, other chain groups and independent grocers were pressuring their distributors to provide them with similar paper containers, and in the latter part of 1941 and the early part of 1942, five more half-gallon paper machines were installed in plants in the area, before World War II restrictions prevented the manufacture of additional equipment of this type.

Martin H. Blank, head of Martin H. Blank & Associates, writes this article on half-gallon containers on the basis of a study covering a period of five or six years. As the head of a firm specializing in agricultural economics and the marketing of agricultural products, Mr. Blank speaks with authority on this subject. This article was written especially for the *American Milk Review*.

When Same Price Exists

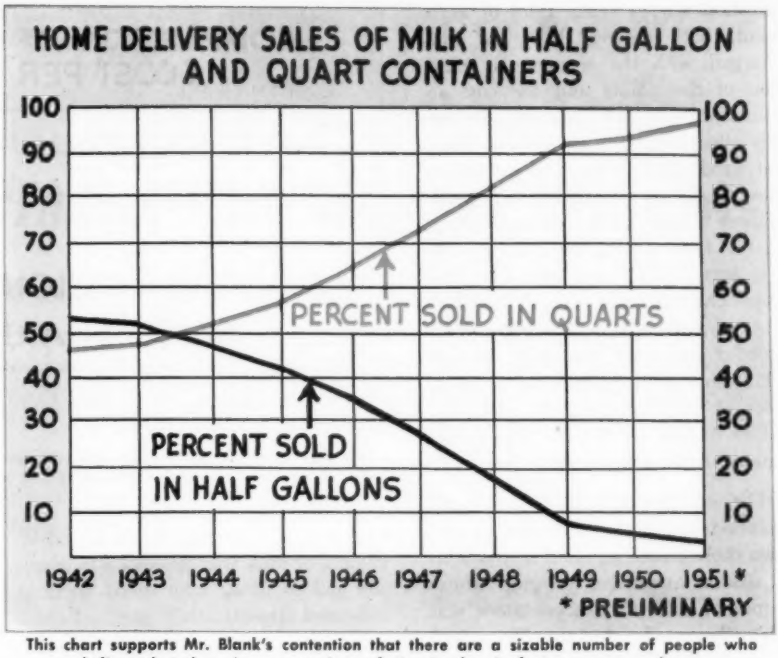
In November 1942, the price structures established by the State of California in the Los Angeles market were changed so that half-gallons

were priced at the equivalent of the cost of two single quarts. In view of the war-time shortages of equipment and the desirability of simplifying container requirements wherever possible, it was deemed advisable to eliminate any price differentials which might cause friction or create additional needs for facilities or containers. Since November 1942, no differential favorable towards the half-gallons has existed. Standard quarts of milk are now selling for 20½c, and half-gallons at 41c in stores, and at 21½c and 43c, respectively, for each size container sold on home-delivery routes.

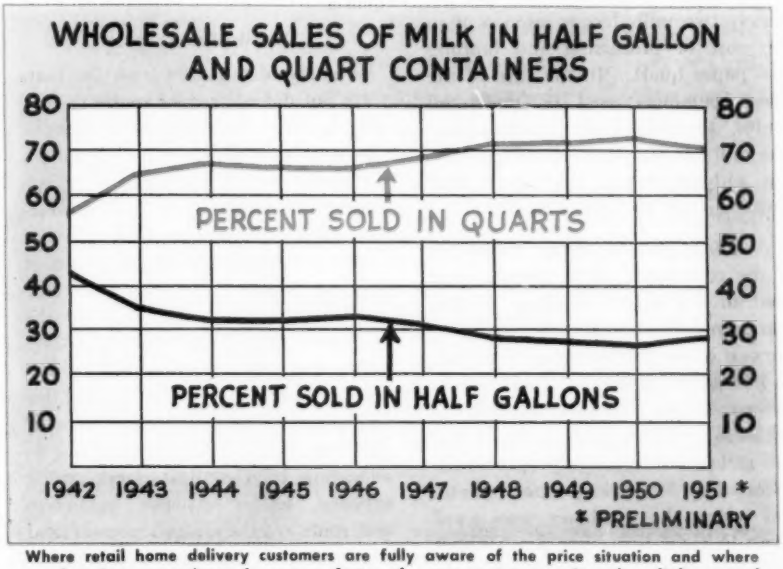
Just prior to the time that the price differential in favor of half-gallons was eliminated, slightly less than half of the total *gallonage* distributed in quarts and half-gallons was sold in the larger size container. Out of every hundred gallons of milk sold in these two consumer sizes, over 47 gallons were sold in the half-gallon container. With the half-gallon container coming into the market, as a result of price competition, the sales figures of a group of representative distributors in the Los Angeles County Marketing Area in the following table show what happened to its use after the price incentive was removed:

The Los Angeles area is widespread geographically, and many consumers drive considerable distance to do their shopping on a cash-and-carry basis, with the self-service market the predominant type. Therefore, in purchasing half-gallons at stores, consumers have been expressing their own preference for the container against buying a similar quantity of milk in quart packages. Spot surveys in some stores still show that there are some consumers who think they are buying milk cheaper in the half-gallon than the cost of two single quarts. However, the constancy of the proportion of the wholesale volume which was sold in the form of half-gallons during the past four-year period, indicates that there are sizable numbers of people obtaining their milk at stores who believe there is a convenience factor to the single package, as compared with purchasing the same quantity of milk in several quart units.

The sharp decline shown in the use of half-gallons on home-delivery routes definitely indicates a lack of any strong preference where consumers are fully aware of the price situation, and where any shopping convenience factor does not exist. When the volume of half-gallons started to decline, some companies rapidly converted certain routes or entire operations over to straight quarts and eliminated half-gallons entirely, as an expense saving measure. The large glass half-gallon bottle was not too convenient a container for consumers to use in the home, and little difficulty was experienced in converting over to straight quart sales. Therefore, in the case of home-delivered milk, we can conclude no consumer preference exists for half-gallons, except where there is a price incentive.



This chart supports Mr. Blank's contention that there are a sizable number of people who believe that there is a convenience factor in the single two quart package.

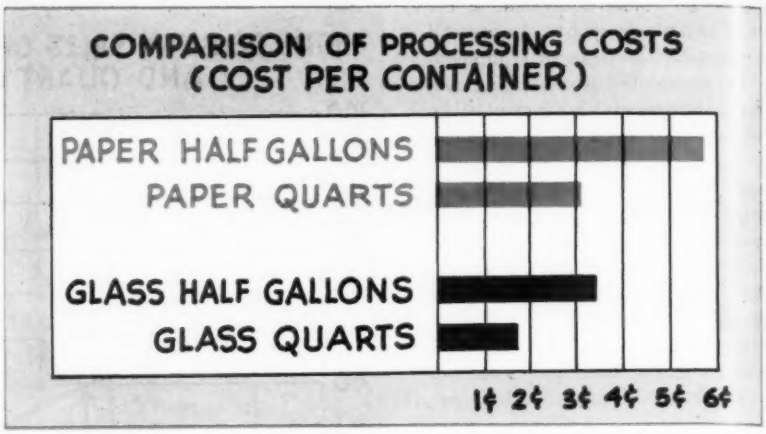


Where retail home delivery customers are fully aware of the price situation and where a shopping convenience is not a factor the two quart container has little appeal.

Little Difference in Processing Cost

The question always raised when considering the half-gallon container is—can savings be made with its use that are sizable enough to be reflected in the prices charged consumers? This

question always starts a lot of argument, both among the plant men charged with the economical operation of the plants and the cost accountants who have the job of properly allocating costs against the different products and sizes of containers handled by the distributors. A series of cost studies made in major plants in the Los Angeles area during the first part of 1950, adjusted to reflect wage changes and certain increased costs of materials and supplies which accrued up until the early part of 1951, showed the following average costs of processing quarts and half-gallon bottles of milk in paper containers and in glass bottles.



The pricing of milk in the two quart container is controversial. Cost accountants are pretty well agreed on the costs of processing and bottling. The difficulty begins at the platform.

The companies whose costs were included in the above studies ranged from those which handled half-gallons in sizable quantities to some whose output of milk in this container was relatively small. As may be noted by the above average cost figures, half-gallon paper containers cost approximately two mills less to process than the cost of processing and bottling two paper quarts. In the case of the glass containers used on the retail routes, the difference was less than one mill between the cost of processing and bottling a half-gallon glass container and two quart bottles.

A detailed study of the operations of the companies whose figures were used in the above averages showed that lower processing costs, including the cost of the containers, of four mills on half-gallon paper containers, versus two paper quart containers, could be achieved where plants were using half-gallon bottling equipment which operated at 50 packages per minute, and where the machines were used seven to eight hours per day. Where smaller equipment was used and operated only two to four hours a day, the cost of processing and bottling half-gallon paper containers was higher than the same costs for two single paper quarts.

A comparatively small volume of half-gallon glass containers being processed in the plants studied, made it difficult to draw any specific conclusions as to what the cost situation would be, if plants were in a position to operate bottling equipment at reasonable capacity for both half-gallon and quart bottles. Cost studies made four or five years ago, when a sizable volume of milk was processed in glass half-gallons along with quart bottles, indicated approximately one and one-half to two mills lower costs in favor of the half-gallon versus two single quarts.

Distribution Costs

A study of the costs from the platform out did not reveal anything conclusive, since the differences between the costs of delivering a half-gallon, compared with two quarts, were primarily dependent upon the unit factors used in allocating total delivery costs on the routes to the two sizes of containers. Although in the past, some cost studies have been made by the California Bureau of Milk Control, in which the unit factor for half-gallons was not exactly twice that used for single quarts, industry cost accountants are now of the opinion that in allocating total delivery labor, truck expense, selling expense, collection and route overhead, and general and administrative expense, the unit factor of two should be used for half-gallons versus a unit of one per quart container. In years past, certain differences in the types of quart and half-gallon containers, and differences in the types of cases used, may have provided a basis for allocating costs to half-gallons in some manner other than twice the quart unit. However, under current conditions, there appears no reason to take exception to the procedures now followed by the cost accountants of our local companies. Obviously, on this basis, all of the expenses involved in handling half-gallon containers, other than processing and bottling, will be exactly twice that incurred in the case of the quart container.

Based on what has happened in the Los Angeles market during the past ten years, and on conditions prevailing currently, we can conclude the following with respect to the half-gallon container:

1) Some consumer preference exists for the paper half-gallon container where consumers buy large quantities of milk at cash-and-carry stores.

2) Strong consumer preference for half-gallons exists only where there is a price saving, as compared with two single quarts.

3) The processing and bottling of half-gallon containers results in no *over-all* savings in costs for the distributor, as compared with straight quart operations, except where the volume to be handled in both containers results in near-capacity operation of the equipment used for each.

4) Where the same types of bottles and cases for both quart and half-gallon containers are used, no sizable *over-all* savings accrue in the delivery functions by selling half-gallons as well as quarts, versus distributing only quarts.

5) Where half-gallon paper containers are already being used in a market, smaller distributors will find it more profitable to have some larger plant supply them with packaged milk in this container, rather than attempting to put it up in their own plants.

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Let's Talk Accounting

By JIM KLUGER

The Problem of Depreciation

IN A PREVIOUS article which appeared in the *American Milk Review* some discussion of the rather nebulous concept of profit was undertaken. I tried to point out that many estimates enter into the final determination of any net profit, not the least of which is an "allowance for depreciation".

We accountants have an unfortunate tendency to use words which mean, to us, somewhat more or somewhat less than they mean in everyday good usage. One of these words is "reserve", another, "provision", both of which are bandied about a good deal when discussing and accounting for depreciation. To most people, a "provision" is something tangible gained or acquired. A "reserve" connotes something set aside for the future. But, as used in a profit and loss statement, "provision for depreciation" means the current, estimated depreciation expense; while as used in a balance sheet "reserve for depreciation" means the estimated value of the asset consumed, up to the balance sheet date. In no ordinary sense has any real provision been made, nor any real reserve set aside.

The concept of depreciation, itself, is not a difficult one to grasp. It means, simply, wear and tear caused by use, or passage of time, or both. Therein arises one of our probems. Just how much wear and tear happens to a bottle filler for every thousand bottles it fills? And just how much of its original costs is used up in one month, in twelve, in ten years? And what about periods of rising prices, in which it often happens that a piece of equipment can cost more used than it did new years ago? Thus, although the concept of depreciation is not troublesome, the handling and accounting for it is.

Basically, the problem of depreciation is one of distributing the cost of a long term or durable asset over its useful life. Its useful life may be measured in terms of time or in terms of units processed. The wear and tear on the asset is expected to be partially compensated for by normal repairs and ordinary maintenance. Thus, we may purchase a piece of equipment for $5,000. We estimate that, given reasonable care and maintenance, it will operate for ten years with only minor breakdowns that can be easily fixed. At the end of ten years, we feel that it will have reached the point at which it will be cheaper to replace than to continue repairing. So we trade it in on a new one, for a trade-in allowance of $500. The picture looks like this:

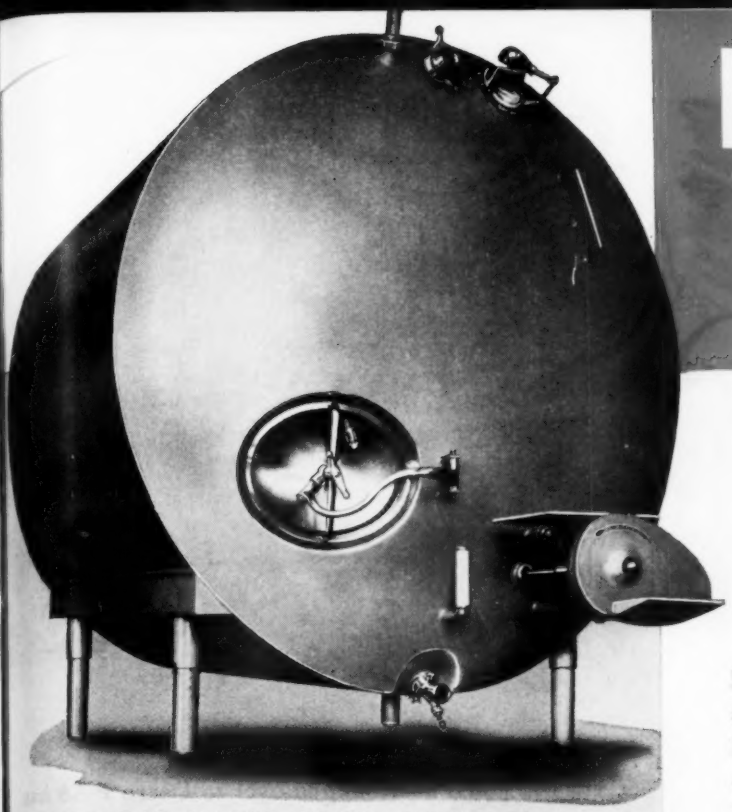
Cost of asset	$5,000
Trade in allowance	500
Used up in ten years	4,500
Depreciation per year	450

So we write off $450 each year for ten years as provision and reserve for depreciation. At the end of ten years, if our estimates were correct, the trade-in value will exactly equal the depreciated or book value of the asset. When the replacement is ordered, there will be no gain or loss on the old asset traded-in. In all this, however, no money has been provided nor reserved to buy the replacement. The books will show "Reserve for Depreciation" of $4,500, which is the amount of cash needed for the replacement (assuming no price changes) but the cash isn't necessarily there. The provision for and reserve for depreciation measure only the estimated cash needed, not provided nor reserved. And, if material price increases are in effect, the reserve falls short of even measuring the cost of replacement, let alone providing any part of it.

This provision that isn't a provision and this reserve that isn't a reserve can cause a goodly amount of real hardship. Every dealer must not only gauge his depreciation as closely as possible, but he must also make real provision for replacement—at increas-

(Please turn to Page 71)

Jim Kluger, specialist in dairy accounting, conducts his exclusive column in the "American Milk Review" each month. If you have an accounting problem or simply an accounting question write to Mr. Kluger at Kapleau, Kluger & Company, 1414 South Penn Square, Philadelphia, Pa. He'll do his best to give you the straight dope.



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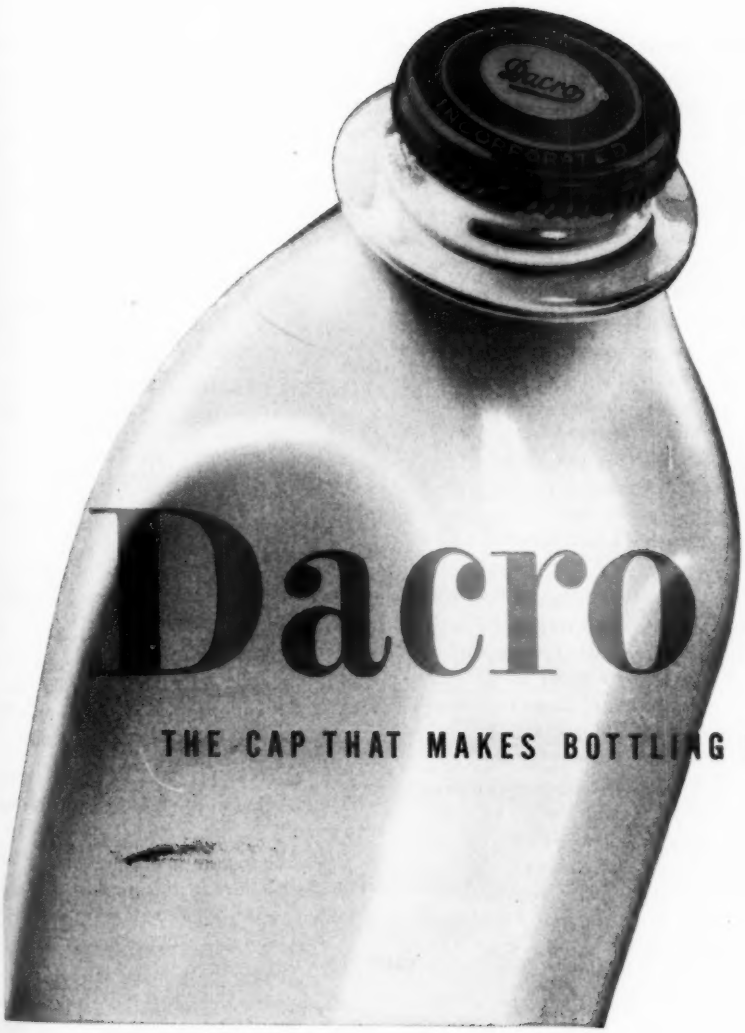


Dacro P·38

THE CAP THAT MAKES BOTTLING MORE PROFITABLE

DR. E. P. BAUM

Margins and Use in Seattle

A Study Of Six Firms In The Northwest Reveals The Narrowest Spread In The Nation — OPS Margin Freeze Puts Operators In Bad Spot

By DR. E. L. BAUM
The State College of Washington

CLASS I MILK utilization, operating spreads, and the resulting net returns are important industry terms, but all too often misunderstood.

To find out just what is meant by these terms, the Washington Agricultural Experiment Stations set up a study of six leading milk distributors in the Seattle, Washington, market. We studied their Class I operations to determine, first, the nature of Class I sales; second, Class I operating spreads by months and for a year; and third, seasonality of Class I sales.

Cooperating dairies were Alpine Dairy, Inc.; Arden Farms Co., Apex Dairy; Carnation Co.; Kristoferson's Dairy; and Golden Rule Dairy. These companies classify bottled fluid milk, fluid cream, buttermilk, bottled skim milk, and fluid milk drinks as Class I milk utilization. All milk sales were converted to a 3.5 per cent butterfat milk equivalent basis in conducting this study. Part of the industry's initial interest in this project arose because such a study could show the relative importance of the kinds of Class I sales in a major market—both wholesale and retail—and their importance in determining the average weighted return and operating spread per quart of milk equivalent. Gross operating spread per quart of milk equivalent means a lot to dairy operators, because it shows the amount of money available for operational expenses and net returns—if any! Today, this information is doubly important, since the OPS uses it as a benchmark in determining resale prices.

Milk Distributors' Operating Spread

A proprietor's gross Class I operating spread for handling fluid milk, cream, and other dairy products is the difference between what that product costs him to buy and what he can sell it for. The difference must be sufficient to pay all operating costs —including a reasonable return for his labor, management, and investment— or he'll go broke.

If his raw product cost goes up considerably, the distributor comes up against two choices—either raise the price to the consumer, or cut the services to the consumer, or both. Or he might cut the quality of the product he sells. In any case, he runs the risk of displeasing his customers. And that hurts!

On the other hand, if he has too great an operating spread, he may become inefficient in his operation. In this case, it can be either the producer or the consumer who pays for that inefficiency.

Dr. Emanuel Baum is a member of the Department of Agricultural Economics at the State College of Washington. He has conducted a number of valuable studies of milk pricing problems in major milk markets. Two of his articles have appeared in other issues of the "American Milk Review." This article on the Seattle market is his third appearance on the pages of this magazine.

Getting at this over-all gross operating spread is a difficult process. First, different prices are paid for milk used in various classes (multiple-pricing plan). Then, there is variation in the resale prices for dairy products for both retail and wholesale—and for the size of container in which the sales are made.

In order to determine the Class I spread for each distributor, or for all of them, we used this method:

1. Determine how much money was received from all fluid milk sales.

2. Figured the number of retail quart of milk equivalents (3.5 per cent butterfat) put to each kind of usage for total Class I sales.

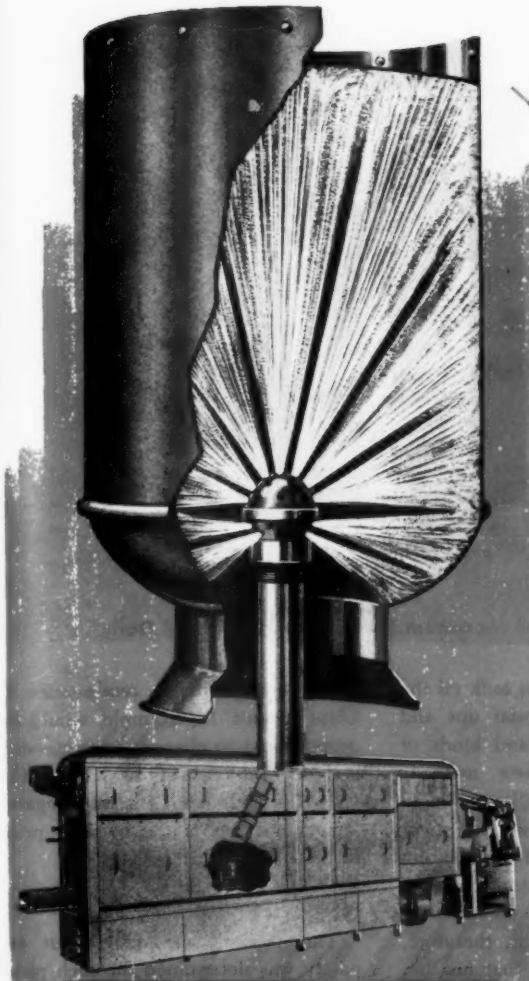
3. Divided No. 1 above by No. 2. Result—the weighted average resale price per quart of milk equivalent.

4. Divided the total cost of buying Class I milk by No. 2 above. This gave the product cost per quart of milk equivalent sold by the distributor.

5. Subtracted No. 4 above from No. 3, giving the Class I operating spread.

The aggregate operating spread for all distributors in the market was obtained in the same way.

There's another way of calculating this operating spread, which some people use. That is to take the difference between the product cost per



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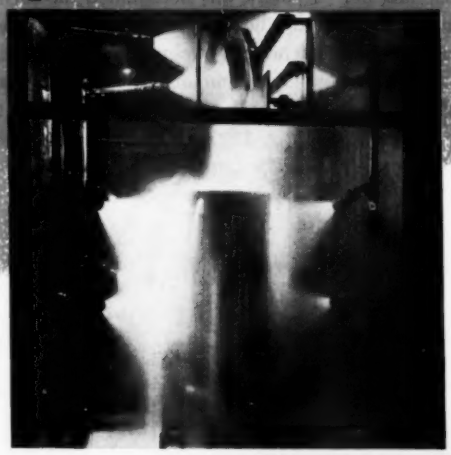

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quart of Class I milk and the resale price per quart of fluid milk delivered to the home. But that's misleading, since it measures only one segment of the firm's Class I business. It ignores the operating spread per quart of milk equivalent used for wholesale sales of fluid milk, milk drinks, and cream, and retail sales of cream and milk drinks.

Everything has to be considered, and each firm has to be considered on an individual basis. Each of the firms studied used its milk in varying amounts for the different products involved. Consequently, they each had different price spreads, and probably had different processing and distribution costs. Obviously they would have different net returns per quart of milk equivalent.

Another thing, operating spreads should be greater in good times than in bad. Processing and distribution costs for milk change with economic conditions. During good times, for example, wages and prices of materials go up. Consequently it costs more to process and distribute milk. During bad times, wages and cost of materials go down, and so should the operating spread. The distributor should consider the degree of change in processing and distribution costs as well as the cost of the milk to him when he sets the resale price of his product.

Furthermore, both the producer's price and the distributor's spread depend on the conditions influencing supply and demand, but not necessarily in the same way. John M. Cassels, in his book *A Study of Fluid Milk Prices* published in 1937, first showed that this was true. Factors causing lower or higher prices for milk off the farm may not cause similar ups and downs in the amounts and kinds of distributors' services. New methods and devices may cut milk producing costs for the farmer without ever touching processing and distributing costs. Similarly, distributors may cut costs in places that have no effect on the producer's costs. It is, therefore, very misleading to think that just because there is a surplus of milk on the market and blend prices are low, that there will necessarily be a narrower operating spread for distributors. In fact, a rise in processing and distribution costs may occur at the same time as a decrease in blend prices!

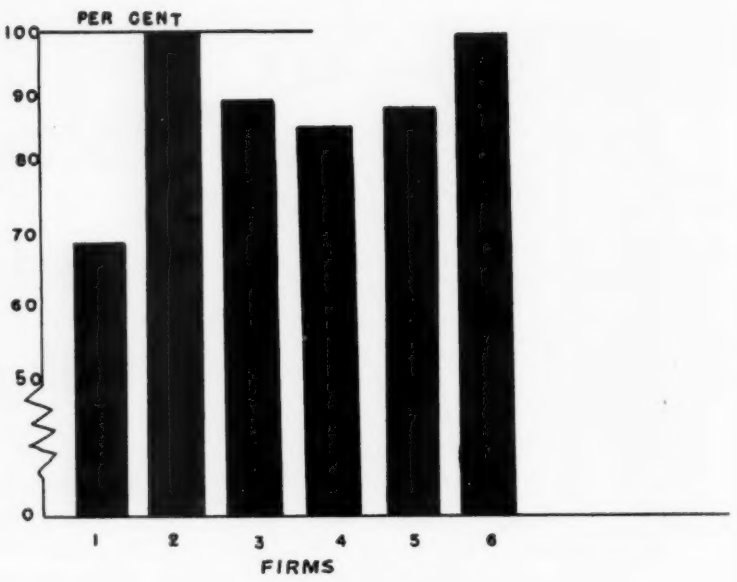

Figure 1
Percentage of Maximum Plant Capacity Utilized Daily

Any change in the resale price of Class I items, for example, would be proportional to changes in processing and distribution costs as long as the Class I price remains constant, regardless of changes in the blended price to the producer.

Near Capacity Plant Operations

The present maximum plant capacity was determined for each plant on the basis of the ordinary work day. The daily volume of milk handled as a per cent of the maximum capacity for each plant varied from 70 to 100 (Fig. 1). Apparently most of the firms studied operated at or near maximum physical capacity. That means they

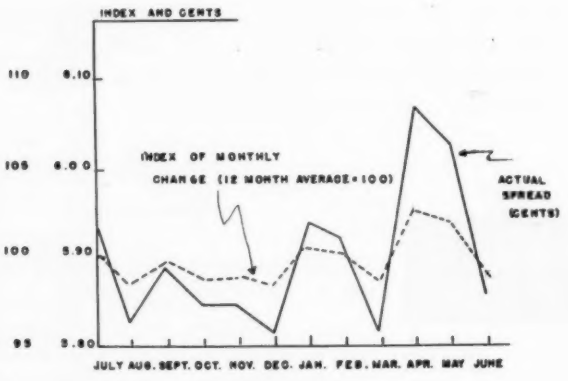

Figure 2
Class I Operating Spread and Relative Monthly Changes In the Margin

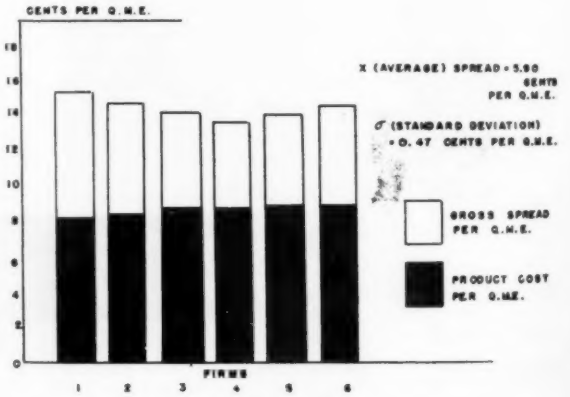
CENTS PER G.M.E.
X (AVERAGE) SPREAD = 5.80 CENTS PER G.M.E.
σ (STANDARD DEVIATION) = 0.47 CENTS PER G.M.E.
GROSS SPREAD PER G.M.E.
PRODUCT COST PER G.M.E.
FIRMS

Figure 3
Class I Operating Spreads and Their Variability

Our EZE-ORANGE Family
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and a prosperous
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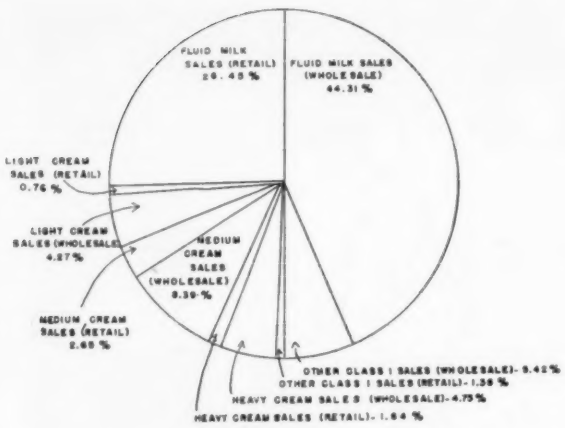
FLUID MILK SALES (RETAIL) 20.45 %
FLUID MILK SALES (WHOLESALE) 44.31 %
LIGHT CREAM SALES (RETAIL) 0.76 %
LIGHT CREAM SALES (WHOLESALE) 4.27 %
MEDIUM CREAM SALES (WHOLESALE) 8.39 %
MEDIUM CREAM SALES (RETAIL) 2.68 %
OTHER CLASS I SALES (WHOLESALE)- 9.42 %
OTHER CLASS I SALES (RETAIL)- 1.38 %
HEAVY CREAM SALES (WHOLESALE)- 4.75 %
HEAVY CREAM SALES (RETAIL)- 1.64 %

Figure 4
Percentage of Total Class I Sales Sold In Different Forms and Type of Sale

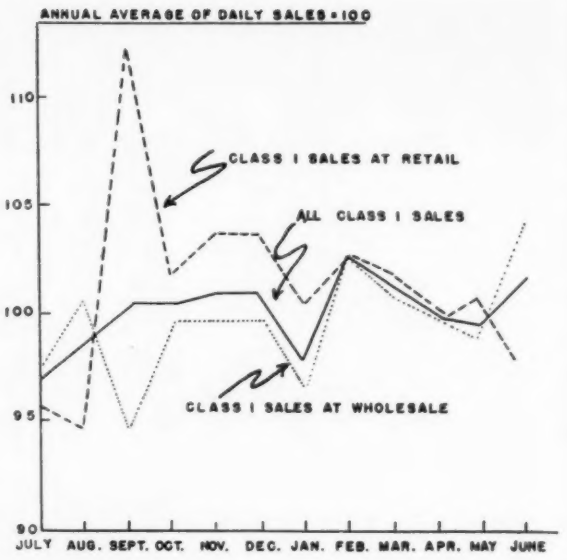

Figure 5 (Right)
Index of Daily Class 1 Sales by Months Including Both Wholesale and Retail

also were benefiting from the economies of high-level output. The total daily volume of milk handled by these six distributors amounted to 91 per cent of their combined maximum physical capacities.

Narrow Class I Operating Spread

The average weighted Class I operating spread for the six distributors varied from month to month, with variations in the components of Class I sales, both at the retail and wholesale level. During the period studied (July, 1949-June, 1950), the operating spread varied from 5.82 cents in December, 1949, and March, 1950, to 6.07 cents in May, 1950—0.25 cents (one-fourth of a cent) or 4.23 per cent (Table 1 and Fig. 2).

The producer received 60 per cent of the distributors' weighted average return per quart of milk equivalent utilized in their Class I operations. This left 40 per cent available for operational expenses and net returns per quart of milk equivalent.

In the October, 1950, issue of the *American Milk Review*, this author reported on a study of milk distribution operations in the Quad Cities (Iowa-Illniois) market. There the milk producer received 56 per cent of the distributors' weighted average sale price. The firms studied then and in this survey were quite comparable, because the Quad Cities firms had 60 per cent of their Class I business at wholesale. Seventy-six per cent of their total sales were in Class I. The gross operating spread of these Quad Cities firms was 6.88 cents per quart of 3.5 per cent milk equivalent. It should be noted that the analysis of the six firms in the Seattle market considers 100 per cent Class I sales.

A recent study of costs and spreads of milk distributors in Memphis, Tennessee, made by the Bureau of Agricultural Economics, revealed an operating spread of 6.17 cents. Producers in that market received 67 per cent of the distributors' average sales price. Wholesale sales amounted to 62 per cent of the total sales, and 98 per cent of the sales in Q.M.E. were of the Class I nature, as defined in the Seattle market.

Table 1
AVERAGE WEIGHTED RETURNS, COST AND CLASS I OPERATING SPREAD PER QUART OF MILK EQUIVALENT, SIX LEADING MILK DISTRIBUTORS, SEATTLE MARKET, 1949-1950

Month	Average Weighted Return per Q.M.E. (Cents)	Cost per Q.M.E. (Cents)	Class I Operating Margin per Q.M.E. (Cents)	Index of Seasonality (Per Cent of 12-Month Average)
1949				
July	14.67	8.72	5.95	100.68
August	14.62	8.79	5.83	98.65
September	14.76	8.87	5.89	99.66
October	14.79	8.94	5.85	98.98
November	14.81	8.96	5.85	98.98
December	14.77	8.95	5.82	98.48
1950				
January	14.82	8.88	5.94	100.51
February	14.77	8.85	5.92	100.17
March	14.63	8.81	5.82	98.48
April	14.72	8.65	6.07	102.71
May	14.70	8.67	6.03	102.03
June	14.57	8.71	5.86	99.15
Annual average	14.72	8.82	5.90	100.00

Variable Class I Utilization

a. *Total Utilization* — During the period studied, distributors' fluid milk sales amounted to 70.76 per cent of the Class I sales. Cream sales totaled 22.46 per cent, and other Class I sales (buttermilk, chocolate drink, etc.) amounted to 6.78 per cent (Fig. 4). The total annual Class I sales for these six dealers amounted to 83,000,603 quarts of 3.5 per cent milk equivalent. Average daily Class I sales varied from 220,000 Q.M.E. in July, 1949, to 232,299 Q.M.E. in February, 1950—a variation of 5.15 per cent. Month-to-month changes in Class I sales were significantly less than month-to-month changes in milk production by Grade A producers in the market. The average daily milk production during May was 80 per cent greater than during December. There were no significant monthly variations in the sales of Class I components as a percentage of average monthly total Class I sales during that period.

b. *Wholesale vs. Retail Sales*—During the period studied, only 32.85 per cent of the total Class I sales of these

(Please turn to Page 78)

we'll do the job with 3 sq. ft.

OF HEATING SURFACE PER B.H.P.

and we can prove it!

with CYCLONIC COMBUSTION

WE REPEAT! Through the principle of *patented* CYCLONIC COMBUSTION, CYCLOTHERM packaged steam generators will produce maximum heat transfer on *any* job . . . *any* application . . . with only 3 square feet of heating surface per B.H.P. That is not an advertising claim - we are stating a fact— *backed by our unconditional guarantee!*

This remarkable performance is based on a revolutionary advance in the principles of heat transfer. In the Cyclotherm unit, the air enters the combustion chamber at a high velocity, and mixing with the fuel is made to *spiral in a revolving vortax* along the entire length of the furnace. This controlled spiral is actually cyclonic in motion. This intensely luminous flame transfers heat to the fire tube both by radiation and convection, resulting in an unusually high rate of heat transfer. *There are no hot spots!* The efficiency of the Cyclotherm principle plus the ingenuity of Cyclotherm design calls for 3 square feet of heating surface per B.H.P. required—*and no more!*

The Cyclotherm meets all state requirements and is built in accordance with A.S.M.E. and National Board Standards and bears the label of UNDERWRITERS LABORATORIES, INC.

Full power operation from a cold start in 15 to 20 minutes. Savings up to 50% on maintenance. Great fuel operational savings.

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Details of these and many other facts regarding Cyclotherm generators are available by writing Dept. A.

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Cleveland 3, Ohio
Wm. Barrington & Son, Inc.
Phoenix, Arizona
The Bingham & Risdon Company
Green Bay, Wisconsin
Carl A. Bovard
Lake Placid, New York
R. J. Clark Equipment Co.
Clearwater, Florida
Crawford Power Equipment Company
Cincinnati, Ohio
Delavan Engineering Company
Des Moines, Iowa
Davenport, Iowa
Dempster Brothers, Inc.
Knoxville 17, Tennessee
Flagg, Brackett & Durgin, Inc.
Boston, Mass.
General Automatic Corporation
Baltimore, Maryland
General Industrial Supply Corp.
Fort Worth 1, Texas
Mr. J. Clifford Hannah, Jr.
Pittsburgh, Pa.
Howell Engineers
Houston, Texas
Hungerford, Inc.
Richmond, Virginia
The Iron Fireman Sales Corp.
Washington, D. C.
Royster H. Johnson Company
Charlotte 1, North Carolina
Kleco Boiler Engineering Company
St. Louis 10, Missouri
Mr. C. O. Bergland
San Francisco, Calif.
Phillips Engineering Company
Detroit, Michigan
Rumbold and Company Inc.
Atlanta 3, Ga.
John L. Shank Heating Equipment
Indianapolis, Indiana
The Shaw Kendall Engineering Company
Toledo 2, Ohio
Technical Service Company
Albuquerque, New Mexico
Temperature Equipment Corporation
Chicago 51, Illinois
P. Thompson Tool and Supply Company
New Orleans, Louisiana
David Thomson Associates, Inc.
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Editorially SPEAKING . .

Ideas Are Tools

TO THE AVERAGE working milk dealer, engaged as he is in a multitude of demanding tasks, the business of evaluating correctly new developments, new products, new equipment is at best a haphazard proposition. More often than not we are inclined to extremes; either we approach the problem with a negative attitude that hampers its logical development and causes an unnecessary number of growing pains or we get so steamed up over a new idea that we neglect to examine it with the critical eye that it deserves.

During the last decade, and more particularly within the post-war period, a healthy number of new avenues have opened up for the fluid milk business. Some of these avenues led straight to more efficient operation, reductions in costs, and better relations with our customers and with each other. Some proved to be dead-end streets that produced the reaction that most dead-end streets produce. Some proved to be winding roads whose ultimate terminus is not yet known. Yet, in each case, there was a tendency to over-simplify or over-complicate something that should have been examined carefully and logically in order to determine its value as a business tool. Paper containers are a case in point. It took seven years of litigation and struggle to get paper containers admitted into the Chicago market. To this very day there are some areas in the country where pasteurization is not compulsory, although most dairymen are of the opinion that the practice is here to stay. Concentrated milk is another example. It came, it flared, it died down. Most milk handlers, to their eternal credit looked on concentrated milk with a pretty open mind. There were some rather frantic moves by producer groups to head off what appeared to be a threat to their fluid market. The alacrity with which concentrated milk was placed in the category of Class I milk reminds one of a beaver colony hurriedly repairing a breach in a dam rather than the actions of a group of modern businessmen evaluating a new product.

Perhaps one of the best current examples of the fluid milk industry and a new idea is the two-quart container. On other pages of this issue of the *American Milk Review*, Mr. Martin Blank of Los Angeles, a specialist in fluid milk sales, has described the experience of Los Angeles with the two-quart container. This type of container, while not indigenous to Los Angeles, was given its most extensive trial in that area. Speaking in general terms the two-quart package has spread from west to east until today it is found, literally, from coast to coast. One has the feeling, however, that it was adopted by milk dealer after milk dealer without a clear understanding of its merits and its demerits.

On the basis of a careful study of the records covering a six-year period, Mr. Blank concludes that what it costs to process and bottle the two-quart package can be determined with a fair degree of accuracy and agreement. What it costs to distribute the package is a question subject to considerable controversy. Mr. Blank points out that where no price differential exists between milk in the two-quart package and in the single quart package, retail home delivery customers expressed an overwhelming preference for the single quart package through their purchases. Store buyers, on the other hand, found a definite convenience in the larger package. A sizable and constant group of people found the two-quart container a definite help in their shopping. The significant point, it seems to us, is the unbalanced nature of the container's usefulness. As a container for retail customers it was, to all practical purposes, rejected. As a container for store sales, even without a price incentive, solely on the merit of its convenience, it has enjoyed a highly satisfactory reception.

There is a great deal of interest at the present time in methods for handling milk in bulk. The farm holding tank and direct tank truck pick-up at the farm are attracting more and more attention. Here the industry appears to be moving ahead slowly but with commendable soundness. The system has its zealots and it has its detractors. For the most part, however, the dominant attitude of the industry is a thirst for information. This is in sharp contrast to the chop that concentrated milk created or the bitter upheaval that marked the advent of paper containers. It is becoming more and more apparent that there are many truly excellent features of the farm holding tank operation. It is also becoming apparent that there are a number of serious problems that may place a definite limit on the extent to which the idea can be applied.

Progress is evolutionary rather than revolutionary. New ideas must be examined critically and honestly in the light of existing circumstances and in the light of future conditions. They should neither be blindly accepted nor blindly rejected. They should be studied as tools in a highly complex business operation. Only by such an approach can the dislocations that inevitably result from the extremes of too little and too late or too much and too fast, be avoided.

●

Personnel Changes in OPS

A DISPATCH FROM Boston informs us that Chester Smith, an economist with United Farmers of New England, has gone to Washington to take over the job of heading the Fluid Milk Division in the Office of Price Stabilization. Mr. Smith will fill the position formerly held by Fred Shipley, Market Administrator for St. Louis.

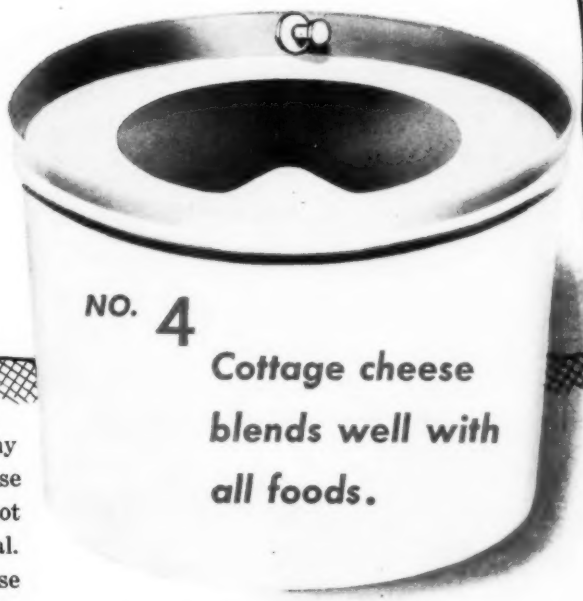
In a way the change is a disturbing event. It is not because we have

(Please turn to Page 38)

5 reasons why this is a Cottage Cheese Year

FOR ANY COURSE OF ANY MEAL,

COTTAGE CHEESE IS JUST IDEAL.



VERSATILITY is the fourth of five reasons why this is a cottage cheese year. Cottage cheese is the perfect companion for almost any food—hot or cold. It can be served at any course of any meal.

The other four reasons are: **(1)** cottage cheese is nutritious; **(2)** it's economical; **(3)** it's appetizing; and **(5)** it's easy to merchandise.

Show shoppers different ways to serve cottage cheese and they'll buy more. So get your retailers to display recipes featuring cottage cheese with crackers, fruits, vegetables, etc.

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INDUSTRY PROBLEMS

Thickening of Concentrated Milk

Question—We have been manufacturing 3 : 1 concentrated milk for about one year and have marketed it in both the liquid and frozen state. Both products have given us trouble on several occasions because of thickening. Can you give us some hint as to the cause and cure of this trouble?

J. C. Y., Indiana.

ANSWER—I assume that the concentrated milk to which you refer is the "new" low-temperature product that is now being sold at retail to the general public for use as fluid milk. Product thickening is an old problem in the concentrated milk industry, and in your case it may be complicated by the fact that the causes of the difficulty may be different with each type of material. I would like to know if the trouble appeared simultaneously in the fluid and frozen milk or if they were not correlated.

In any event, the milk used for the manufacture of your concentrated product should be of the highest quality. The titratable acidity should never exceed 0.16 per cent and should preferably be about 0.14 per cent as lactic acid.

The temperature of forewarming may also be a factor in this thickening problem. I would advocate that it be kept as low as possible. In general, it can be stated that thickening will decrease steadily as forewarming temperatures are dropped from 170° to 140°F. If it is feasible in your operation, I would, therefore, suggest that this latter temperature be employed.

The thickening problem is generally minimized during the fall, winter, and early spring months. The greatest difficulty is experienced during the late spring and summer months when milk characterized as "unstable" is commonly encountered. It is probable that some of this instability is due to changes in the salt balance of the milk.

Sommer and Hart[1] have reported that low heat stability is due in many cases to an excess of calcium and magnesium. They have suggested the addition of small amounts of disodium phosphate as a means of correcting this condition. This is sometimes done in the manufacture of evaporated milk, but may be forbidden in the case of milk for fluid consumption.

The thickening or even jelling of frozen concentrated milk may be caused by temperature fluctuations during cold storage. It has been recommended that frozen concentrate be held at temperatures between −10° and −20°F. and that in no case should this product be permitted to warm above −10°F. until it is thawed for consumption. Under proper storage conditions even frozen 4 : 1 concentrate can be made that possesses fine reconstitution properties and produces fluid milk of excellent body and flavor.

[1]H. H. Sommer and E. B. Hart, J. Biol. Chem. **40:** 137, 1919.

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review." Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

Cooling Before Pasteurizing

Question—We produce milk and sell to a dairy, but we have to cool our milk before shipping, even though they pasteurize it. Following the same reasoning, would it not be necessary to cool our own milk at home before we processed it in a home pasteurizer? If we pasteurized milk right from the cow, would we get feedy or cowy flavors or maybe some bacteria that precooling does away with?

E. A. D., New York.

ANSWER—The milk plant desires that milk be cooled within one hour after milking because bacteria will grow readily at ordinary temperatures and, in the plant, it may be necessary to hold the milk for several hours before it can be processed. In most plants it is not necessary to cool morning's milk if it is delivered as soon as possible after milking, but it is either processed immediately or cooled by the dairy before storage.

If you are able to process your own milk supply within an hour after milking, there is no need to cool the milk before pasteurizing. It would only be a time-consuming procedure, not to mention the trouble involved, and would make it necessary to use more heat to obtain proper pasteurization temperatures.

On the other hand, if you find it necessary to delay the home pasteurization for several hours, the milk should be held at a low temperature, preferably near 40°F.

So far as we know, there is no significant difference in feedy or cowy flavors in milk whether immediately pasteurized or precooled and pasteurized. Normally we expect lower bac-

(Please turn to Page 85)

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THE PRINCIPLE AND PRACTICE OF TIMING H. T. S. T. PASTEURIZERS

By C. H. WEBER

THE PRINCIPLE of pasteurization is based on the fact that sufficient heat will kill pathogenic microorganisms, thereby rendering milk and its products, potentially contaminated with disease producing organisms, safe for consumption by man and animals. The effectiveness of heat treatment is based on the temperature to which the product is heated and the time that it is held at or above lethal temperatures. The temperature to which the milk is subjected can be measured easily and fairly accurate with thermometers. The time of holding can also be measured easily and fairly accurate with clocks when the product is held stationary as in batch pasteurization. But simplicity and accuracy of measuring the holding time tends to vanish when a liquid is moving or flowing during treatment.

The average velocity flow is dependent upon energy or pressure applied to the liquid, the resistances to flow and cross-sectional area through which it flows. The first two of these contributing factors are not constant in our present H.T.S.T. pasteurizers. So-called positive pumps of the gear or piston type are used to supply the driving force. Wear in drive mechanism, usually a belt, will change the speed of the pump, resulting in a change in the average velocity. A change in the clearance of the moving parts of the pump, due to wear or thickness of gaskets, will also result in a change in capacity. The holding chamber is usually a piece of piping of fixed diameter and length, but it may and does entrain air and foam, resulting in a decrease in functional area and an increase in average velocity.

There are many factors which affect resistance to flow or capacity. Some of those which occur commonly and have a marked effect are air leaks on the vacuum side of the pump, deposition of soils on the plate or heat transfer surfaces, and clearance between the compressible gasketed plates. On one type of heat exchanger, using very small bore tubes, the pump pressure may vary from 900 to 1800 P.S.I. during several hours of operation. On conventional plate type heat exchangers, the pressure invariably increases during continuous operation. At one time, the unit here at the College fell off in capacity from 3600 lbs. per hour to 2800 lbs. per hour during a three hour run.

Ask most any operator of an H.T.S.T. pasteurizer, what holding time he is operating at and he will give you a specific time, such as 17 seconds. Actually this may be true only for one specific time in his operation and for only some of the particles of milk. This raises the second basic principle which has a direct bearing on the holding time.

A flowing liquid does not move as a solid mass. If you determine the speed of one part of a moving belt you can be assured that all other parts of it are moving at the same speed. A liquid, due to its nature, does not stay fixed in relation of one particle to another. Start a race with 100 bacteria in milk flowing through a given length of pipe and some may get through in less than half the time it takes some of the slow pokes. These many factors which affect the average velocity and flow characteristics complicate the problem of being assured of adequate safety treatment of the milk.

Public Health Specifications

Public Health legislative officials specified that when milk is heated to 160°F. or more, it shall be held at this temperature for 15 seconds or longer. The selection of this time and temperature combination was based on experimental work with pathogenic organisms and comparison to the batch method in reduction of the total bacterial count. Work by Dr. A. C. Dahlberg, while at the New York State Agricultural Experiment Station in the thirties, shows that a temperature of 161°F. for 16 seconds most nearly approaches the equivalency of batch pasteurization of 143° F. for 30 minutes. In practice, this time and temperature is usually attained or exceeded. To avoid diversion, pasteurizers are operated at a

*Presented at the Dairy Industry Conference, Cornell University, Ithaca, N. Y., September 6 1951

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If you'd like to see filled and capped bottles zipping down your line at speeds faster than you've ever had before . . . Cemac's the filler for you. And, when production keeps rolling at a rapid pace at the filler, your entire operation is speeded up. You get your money's worth from all of your equipment. Your profits get a nice boost . . . as your costs get kicked down. Ask us to show you actual cases where Cemac is turning them out at speeds up to 160 bottles per minute. And remember that Cemac in combination with the Dacro P-38 Cap gives you the finest operation of all.

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How close does ***your*** *filler come to these average Cemac speeds?*

CREAM LINE MILK	135 BPM
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20% CREAM	120 BPM

NOTE: These are rated capacities for Cemac 28 . . . but they are exceeded in dairies from coast to coast, throughout the daily run.

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temperature of 161°F. or higher, and the minimum holding time is generally in excess of 16 seconds.

The regulations covering H.T.S.T. pasteurizers give specific requirements for controlling and measuring the temperature but neglect to do the same for the holding time. The manufacturer had to devise his own means to assure adequate holding time and each sanitarian attempted to devise a method which would measure the holding time. There were about as many methods and technics as there were testers, which resulted in inconsistencies and disagreements. The 3A Sanitary Standards Committees attempted to formulate a standard method of measuring the holding time. They soon learned that the factual data upon which to base a sound standard was not available, so they enlisted the cooperation of this College and financed the necessary research studies. The work was carried on by Mr. W. K. Jordan under the supervision of Dr. R. F. Holland. The Graduate School thought highly enough of Jordan's work to grant him his doctorate.

With the accurate data obtained from this study, the Standards Committee were able to draft a 3A Standard Method for the determination of the holding time of H.T.S.T. pasteurizers by means of the salt conductivity test. This Standard is being generally accepted by officials and the industry. Details of the test will not be covered as copies can be secured from Dr. E. H. Parfitt, Secretary, D.I.C., S.S.S., 307 No. Michigan Ave., Chicago, Ill.

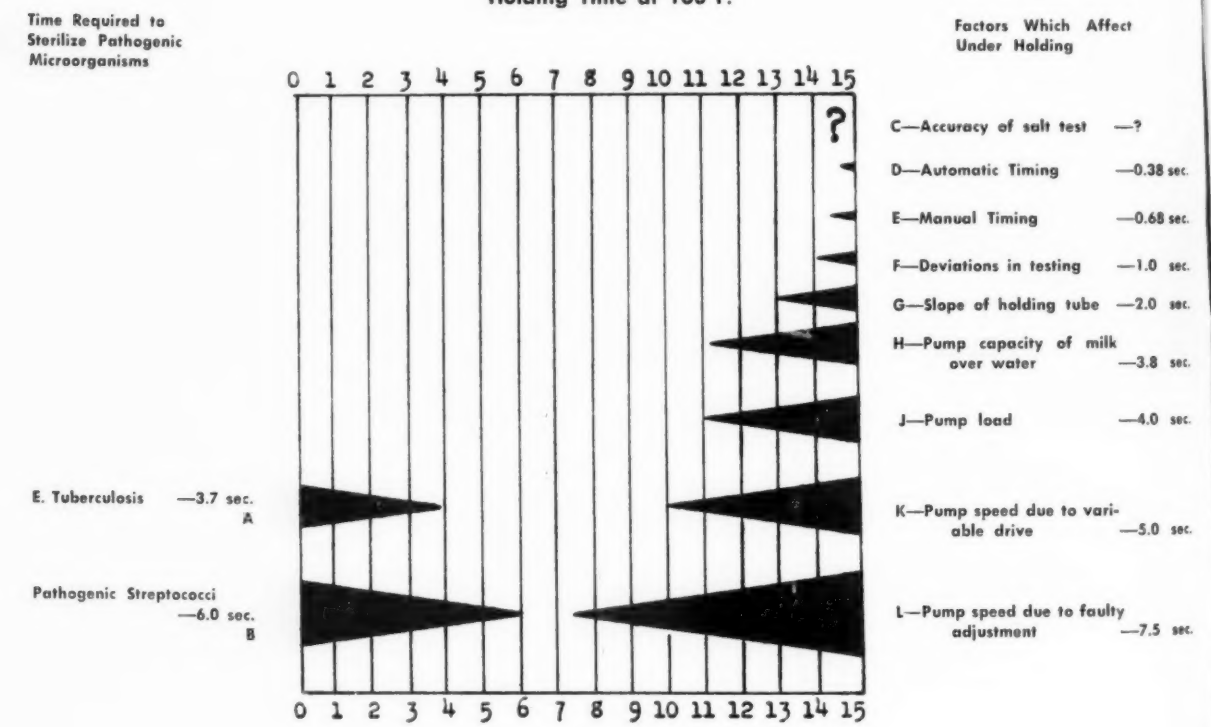
This test method has a serious limitation in that it can be used only with water operation and cannot be used on milk or milk products operations. Present pumps in use do not necessarily deliver the same volume of milk as water. Milk, cream and ice cream mix may have flow characteristics different than water. Foreign substances cannot be introduced into the flow stream of the holder because of the resulting adulteration. A thermal wave, either above or below the normal operating temperature, can be used without adulterating the product. Mr. H. L. Thomasson of the Indiana State Department of Health was one of the first, if not the first, to try injecting cold pasteurized milk at the upstream end of the holder and measuring the time for this cold slug to produce a readable response on the indicating or recording thermometer located at the down stream end of the holder. Representatives of the Trumbull Electric Mfg. Co. induced a sharp rise in temperature by increasing the voltage flowing to the electrodes on the Electro-pure pasteurizer and reading the response on the thermometers.

Each of these timing methods can be applied directly to the product being pasteurized. With each a correction factor must be applied because of the time lag in thermal instruments. This correction factor must be determined for each thermal instrument and for each variable condition of operation.

Instruments On the Market

These methods require little or no extra equipment aside from that in normal use on the pasteurizer and are simple and easy to perform. The first method has the disadvantage that a foreign substance is added to the product being pasteurized and the cold slug may lower the temperature of the product being pasteurized below the legal temperature. The thermal safety instruments may not respond to this sub-legal temperature because of its short duration and sub-

CHART I
Holding Time at 160°F.


Time Required to Sterilize Pathogenic Microorganisms
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
?
E. Tuberculosis —3.7 sec. A
Pathogenic Streptococci —6.0 sec. B
Factors Which Affect Under Holding
C—Accuracy of salt test —?
D—Automatic Timing —0.38 sec.
E—Manual Timing —0.68 sec.
F—Deviations in testing —1.0 sec.
G—Slope of holding tube —2.0 sec.
H—Pump capacity of milk over water —3.8 sec.
J—Pump load —4.0 sec.
K—Pump speed due to variable drive —5.0 sec.
L—Pump speed due to faulty adjustment —7.5 sec.
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

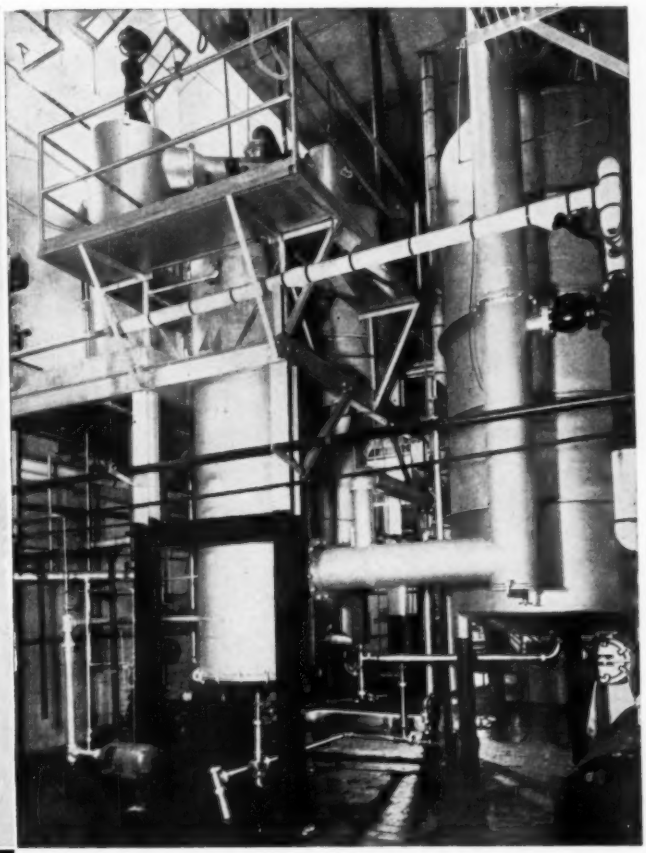
Rx FOR PROFIT:

better concentrated milks at less cost

BETTER PRODUCTS — Buflovak evaporation is practically instantaneous. Natural flavor, uniform texture and appealing color are the sale-winning results of rapid concentration with a short exposure to heating surfaces. Correct operating temperatures maintained by automatic controls also play an important part in preserving original goodness. Polished stainless steel in parts coming in contact with milk prevent metallic off-flavors. Sterile conditions always prevail, because cleaning is easy, thorough and positive.

LESS COST — In Buflovak Double Effect Operation, steam literally does double duty. Fuel and cooling water requirements are slashed in half. In a Buflovak Triple Effect installation equipped with a Vapor Heater*, savings in steam reach 67%, cooling water 80%. Then, too, Buflovak's tangential method of vapor handling results in the highest possible solids recovery. These remarkable savings help pay for your Buflovak Evaporator and will lengthen your profit margin throughout the equipment's long lifetime.

*Buflovak Vapor Milk Heaters can be furnished with new equipment or fitted into existing installations.



Buflovak

EVAPORATOR

Write for Bulletin 343

CONVERSION UNITS

It is smart economy to get the most out of your present equipment. If you are operating with a coil pan, increasing demands for concentrated milks may be putting a strain on your equipment. Before you decide to abandon your coil pan, consider CONVERTING to Buflovak Double Effect Operation. By simply adding a Buflovak Evaporator, you can increase capacity, improve your product and gain profit building double effect efficiency.

Buflovak PREHEATER

(steam type)

Using a combination of low pressure steam and hot condensate, the Buflovak Preheater speeds production and cuts cost. An improved method of baffling, which insures positive multiple pass circulation, together with uniform heat distribution results in exceptionally large capacities. Quickly closed for operation; easily opened for thorough cleaning. No parts to disassemble, no gaskets to replace. Completely sanitary.

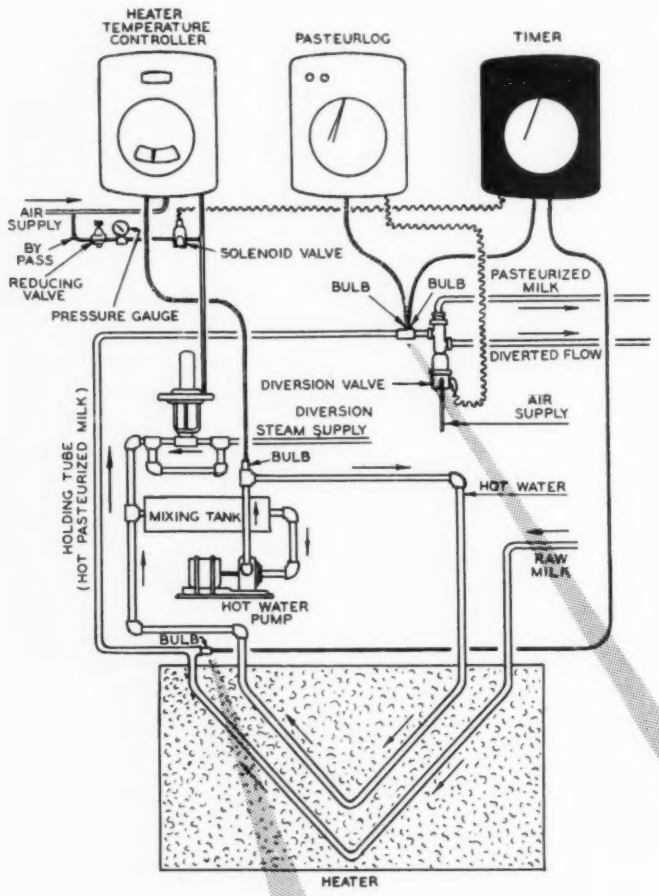
BUFLOVAK EQUIPMENT DIVISION
OF BLAW-KNOX COMPANY

1627 Fillmore Avenue — Buffalo 11, New York

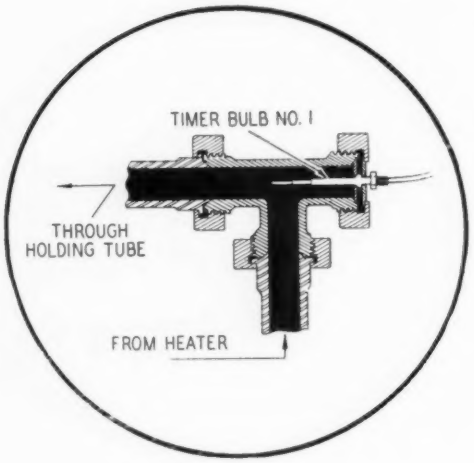
legal temperature milk may pass into the cooler.

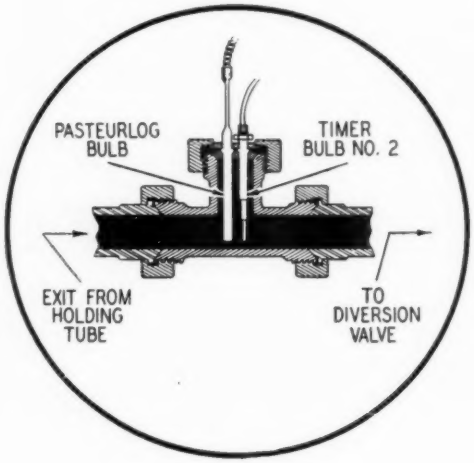
Four or five instrument manufacturers have developed various types of thermal timers. A thermal sensitive bulb is located at each end of the holder. These bulbs are connected to a recording or indicating instrument. A thermal wave is produced by causing a fairly sharp rise in the product being pasteurized. This heat wave or temperature rise is detected by each bulb as it passes and the time for it to move between the two bulbs is considered the holding time. These instruments can be a permanent part of the pasteurizer and timing determinations can be made at any time desired while a product is being pasteurized. Normal operation is not affected except for a slight rise in temperature for a very short time. These timers would approach the ideal if they gave correct readings or readings with a constant correction factor. It is regrettable that this is not the case. The manufacturer recognized the limitation of their instruments and realized that there is a correction factor and that this factor would be the most constant if the pasteurizer and the timer were operated under a standard set of conditions.

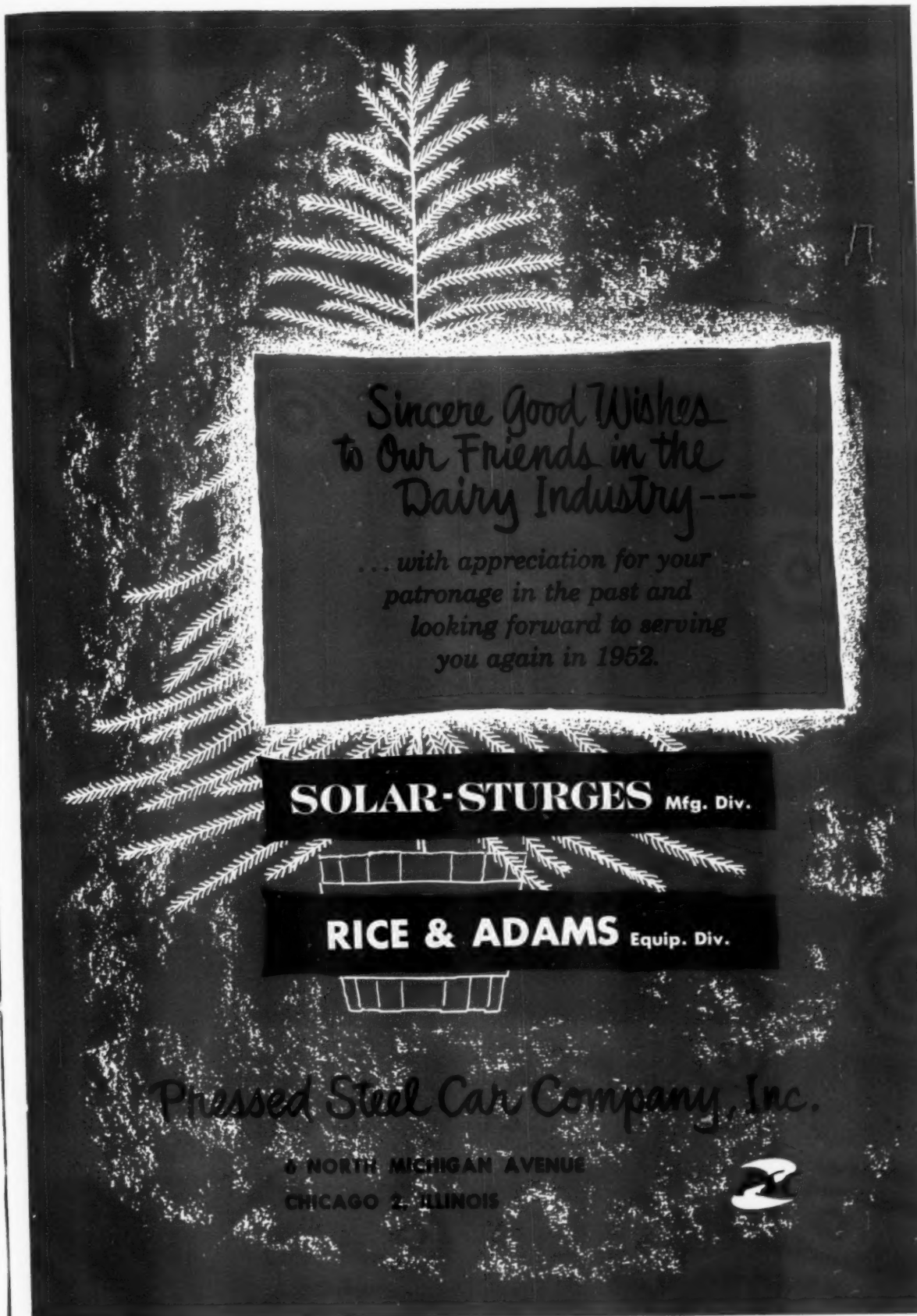
Again they asked the Dairy Department of this College to undertake a study of these thermal timers to determine their limitations and to obtain facts upon which to predicate a standard method. The work of Jordan showed that these thermal instruments gave readings showing from 0.5 to 6 seconds longer holding time than that obtained by the standard salt



The accompanying diagram shows how a commercial timer is installed as permanent part of the HTST system. In this particular timer, manufactured by the Foxboro Company, two resistance bulbs are installed in the milk lines. These bulbs are connected with the timer. Bulb No. 1 is installed at the inlet end of the holding tube as shown in the detail at left. Bulb No. 2 is installed in the outlet end of the holding tube as shown in detail at right.






Sincere Good Wishes
to Our Friends in the
Dairy Industry---
... with appreciation for your
patronage in the past and
looking forward to serving
you again in 1952.
SOLAR-STURGES Mfg. Div.
RICE & ADAMS Equip. Div.
Pressed Steel Car Company, Inc.
6 NORTH MICHIGAN AVENUE
CHICAGO 2, ILLINOIS

conductivity test depending on the instrument under test and the method of operating the pasteurizer. However, he found that when any one pasteurizer and any one timer was operated under a set of standard conditions each test instrument would give reproducible results with only slight mean deviations. The correction factor for each timer under these standard conditions was constant enough for all practical purposes. The correction factor for one instrument may be 1 second while for another it may be 3 seconds or more.

The results of this study are being used to prepare a 3A standard method of determining the holding time of H.T.S.T. pasteurizers by the thermal method. A tentative draft has been worked out by a task committee and will be considered by the three joint committees in the near future. With final adoption and general acceptance of this standard thermal method each pasteurizing unit may come equipped with the timer. It will be tested at the time of installation, the correction factor ascertained and thereafter applied or the timer may be designed so that it can be adjusted to compensate for the correction factor. In that case holding time readings would be accurate within the reproducible range of the instrument and the standards of performing the test.

With the adoption of this method of timing it would appear that we will have as good a record of holding time as we do of the temperature to which the product is subjected. However, what I expect will happen is that the operator or inspector will press a button and get an automatic reading of the holding time. He will not be satisfied with a single reading so he will repeat the test several times on the same day or on different days. Each time he may get a different reading each of which may and should be correct. As previously pointed out the holding timing does not remain constant because of the inherent variations in pump capacity and flow characteristics of a liquid. A recorder shows variations in temperature and a timer will show variations in time. Then the operator or inspector is going to wonder whether there were shorter holding times than those obtained at the time he performed the test. He will ask for or at least hope for an instrument that will give a continuous recorded chart of the holding time similar to that which he has for temperature.

We must face the fact that with batch pasteurization we do have, within certain limitations, a record of the time at which all milk is held at the pasteurizing temperature. Comparative information is not available for continuous flow pasteurizers. There are however other advantages which compensate for this disadvantage. With batch pasteurization the holding time may be reduced to zero. With an H.T.S.T. pasteurizer the holding time can be and usually does vary only to a limited degree. Most factors which affect the holding time tend to lengthen rather than shorten it.

If the holding time was shortened intentionally or otherwise to less than half the normal time, the pasteurizer would not heat the milk and it would be diverted. A seven and one half second holding time at or above 160° F. is still sufficient to kill pathogenic organisms but there would be very little margin of safety.

Most Accurate Test

The salt conductivity test is the most accurate standard practical test available today. Altho it cannot be used directly on milk operation it can be applied indirectly. A unit is timed and adjusted on water operation to a 16 second holding time. The time to deliver a measured volume of water is then ascertained. For discussion purposes let us assume that 10 gallons of water were delivered in 1 minute. With milk operation if the time to deliver 10 gallons was less than 1 minute the holding time would be proportionately shorter and if the time was more than 1 minute the holding time would be proportionally longer. Using this indirect method it is assumed that milk has the same flow characteristics as water. If there is a difference it is so slight that it has no practical significance. However milk may foam more than water and this foam may be entrained in the holder resulting in a true holding time less than that calculated based on volume delivered. This error can and should be avoided or reduced to a minimum by proper design and installation of the holder.

It is difficult to measure milk delivery accurate by permitting it to flow into a 10 gallon can, because foam accumulates on the surface. Weighing is usually not very convenient. Volumetric gauges on the raw milk supply tank or pasteurized milk surge tanks are sometimes used for determining the volume pasteurized in a given time. Such gauges are

COSTS LESS THAN ICE

The first milk company to use railroad mechanical refrigeration to ship dairy products has reported a drop of at least 80 percent in costs from the ice method.

Clark H. Bowen, general manager of Bellows Falls Co-operative Creamery Inc., told government officials that the company is "highly pleased" with the performance of mechanical refrigeration units.

In reply to an army research engineer's query concerning Thermo King units, Bowen wrote:

"Our costs per month for refrigeration during the war in summer months, not including depreciation on the units, has been reduced from monthly average cost of ice $2500 to $500 cost of gasoline and oil."

Bowen said that though ice costs figured in the change-over to mechanical refrigeration the firm also "wanted to get away from the ice handling and to keep ice and ice water off the paper milk containers that we are shipping."

"As to the cost of ice," he said, "during warm summer months it took about four tons of ice to each car with an average cost of $25. Gasoline required to give us the same or better refrigeration in the mechanical unit for the same run cost about $3."

"Since May when the units were installed," Bowen said, "we have not had one mechanical failure en route. Cars are serviced by our men at our end of the run, gassed, greased, etc. We figure that the units will pay for themselves in savings in a short period of time."

An Indiana milk producer* added a new Henszey Effect to an existing coil type pan. Result — 11,000 pounds per hour, condensing skimmilk, 4 to 1!
*Name on request.

Top can be swung open for inspection. Notice the Outlet Separator — a Henszey feature that assures 99.98% milk solid recovery.

Bottom door opens making all inside "straight-through" surfaces visible and easily accessible.

Add a NEW HENSZEY EFFECT

DOUBLE Evaporating Capacity Without Extra Steam or Water!

A New Henszey Effect can be installed to operate as an integral part of your present serviceable evaporating equipment. Think of the savings of such an installation in your plant! The Indiana milk producer shown did this and is able to double his output at no increase in steam or water consumption . . . resulting in twice the capacity at only half the initial cost of an entire new system. In this installation the equipment became exceedingly flexible . . . it can now be used continuously with automatic feed control. Fast, thorough cleaning is also accomplished as though it were one unit! As the need for more capacity increases (or if the original equipment needs replacement), new stainless steel Henszey Effects — requiring a minimum of space — are easily added to provide all the efficiency of a Henszey Multiple Effect Evaporator.

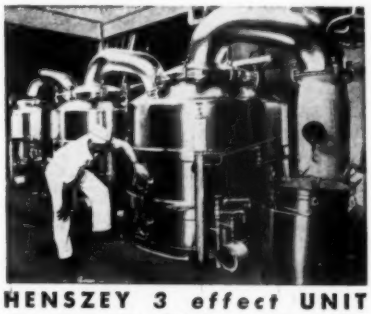
Write for Bulletin D141.

HENSZEY CO. Dept. A Watertown, Wis.

Also manufacturers of Coil Type Vacuum Pans and Vapor or Steam Preheaters

Other HENSZEY Products

- Continuous Blowdown
- Feed Water Meters
- Boiler Feed Regulators
- Indicating Flow Meters



HENSZEY 3 *effect* UNIT
Saves up to 70% STEAM and 72% WATER. COMPACT unit construction. All parts easily accessible for cleaning and inspection.

HENSZEY 2 *effect* UNIT
Note four foot diameter dome doors in this installation. They swing back for simple, quick cleaning.

Matter of Fact
BY EDWARD A JOSEPH
IN NORTH AMERICA UNTIL ABOUT 1900 BUTTERMILK WAS USED CHIEFLY FOR FEEDING FARM ANIMALS
TO PROTECT THEIR COWS ON THE ISLE OF JERSEY, A LAW PASSED ABOUT A DECADE BEFORE THE AMERICAN REVOLUTION, STILL ENFORCED, PROHIBITS CATTLE FROM BEING BROUGHT TO THE ISLAND FOR ANY PURPOSE BUT TO BE SLAUGHTERED
COWS BROUGHT IN FOR MEAT MUST BE KILLED WITHIN TWENTY FOUR HOURS
MILK EXPOSED TO EVEN INDIRECT SUNLIGHT FOR A HALF HOUR MAY DEVELOP AN "OXIDIZED" FLAVOR; NUTRITIVE VALUE IS NOT AFFECTED BUT IT IS OFF-FLAVOR IN TASTE

not highly accurate but if they are accurate to within 5% the holding time calculated therefrom will be accurate to within less than 1 second.

The raw milk constant level tank is an integral part of all H.T.S.T. pasteurizers. It can be calibrated and used as a volumetric measure of the capacity of the pasteurizer. The milk feed line to this tank is closed and the time determined to empty a measured volume, usually 10, 20 or 30 gallons. A metal measuring stick or calibration lines on the inner wall of the tank may be used but they are hard to read because of foam on the surface of the milk. Electrically sensitive level measuring probes called by trade names as Faratron or Lactron are simple accurate and easy to read. Excessive foam may affect accurate operation. These instruments carry two probes, one mounted high and the other low. The distance between the probes can be set to any desired volume such as 10 or 20 gallons. Colored electric lights in the instrument turn on or off as the level of the milk falls below a probe. A stop watch is used to measure the time for the pre-determined volume to be removed from the tank and passed through the pasteurizer. Instead of the colored lights the electric lines may be connected to an electrically operated stop clock. The instrument automatically measures and indicates the time to pasteurize a given quantity of milk. It is simple, practical and fairly inexpensive. Until more accurate, direct reading or controlling instruments are available, this is the timing instrument of my choice.

The foregoing discussion pertains primarily to the pasteurization of fluid milk. The same conditions apply to milk products with the exception that more total heat is necessary to give the same bacterial distribution. For example, preliminary work indicates that the pasteurization of ice cream mix at a temperature of 175°F for 25 seconds is equivalent to milk pasteurized at 160°F for 15 seconds. Although present regulations do not make any differentiation between milk, chocolate drinks and cream, bacteriological studies show that organisms are more resistant to heat in the latter two products. It is fortunate that it is the practice of industry to use higher temperatures or longer holding times on these products.

Summary

The holding time in H.T.S.T. pasteurization varies considerably more than the holding time with batch pasteurization. This variation is due to changes in pump efficiency and changes in pump load.

Practical instruments are not available for measuring and recording the minimum holding time during the entire operation. A number of thermal instruments have been developed for measuring the holding time with milk or milk products pasteurized. These instruments have been tested and found to give reliable results when operated under certain standard conditions.

Conclusions

There is a need for the development of a pump or other devices, which will deliver or control the capacity of the unit throughout an entire operation and day after day.

An alternative to uniform constant capacity would be an instrument which would measure and record the minimum holding time and which would also stop the operation or divert the flow if the holding time became sub-legal, performing a function comparable to the thermal limit safety controller.

Even with the lack of a direct means of measuring the holding time at all times the holding time seldom becomes sub-legal and probably never to the extent to result in a potentially dangerous product.

Smartest Package in the Dairy Field

Cellophane on Glass Milk Bottles

The Sign of Smart Merchandising

With its attention value, its economy, its protection and convenience, Cellophane Hooding in Glass Milk Bottles *is* the smartest package in the dairy field. Not only is it smart in appearance, it's the smart choice of promotion minded dairies.

Cellophane on Glass Bottles shows at a glance the amount of milk on hand. It gives your customers the added assurance that the milk can be tightly resealed to protect the natural flavor. Both the dairy and its customers get the benefit of economy for Glass Bottles can be used over-and-over. There is No Necessity of a New Package Cost on every quart of milk you sell.

Cellophane Hooding on Glass Bottles gives your milk added protection with its Weather-proof, Tamper-proof features—yet is easily removed by the housewife.

NOTE: Dairies that use Cellophane Hooding can also avail themselves of a complete advertising-merchandising campaign that is designed specifically to SELL MORE MILK.

ONE ROLL HOODS 10,000 BOTTLES

SMITH-LEE CO., INC. *Cap Headquarters* ONEIDA, NEW YORK

By D. K. MacDONALD
President, D. K. MacDonald & Co., Inc.
Seattle, Wash.

DON'T WAIT FOR THE FIRE

Are You Paying More For Insurance Than You Should? Do You Have Adequate Coverage? Better Find Out

EXPERIENCE, is a harsh teacher, especially for the dairy plant operator wo waits until fire has struck his establishment before examining his insurance program with a critical eye. Obviously, the time for such insurance "stock taking" is before, not after the event.

The objective of any fire insurance program is balance. There are two ways in which an insurance program can be out of balance: by over-insuring the creamery owner, or by under-insuring him.

If you are over-insured, you are paying out more money in insurance premiums than you should for the protection which those premiums buy. Re-examination of your program may show that your insurance costs can be reduced by a sizable amount with no reduction in the protection enjoyed.

If you are under-insured, you are not adequately protected against losses which you would sustain in the event of a serious fire in your dairy plant. Under-insurance may be the result of a penny-wise, pound foolish policy. Most often, however, it is due solely to lack of knowledge of the risks involved.

In most cases, an insurance program which needs overhauling will be out of balance in both respects. There may be duplication and cross-coverages causing over-payment of some insurance premiums. At the same other essential coverages will be lacking. A skilled insurance analyst may be able to give you balanced insurance coverage with lower premium costs than you are now paying.

Though the job of blueprinting a detailed insurance program must be done by someone with expert knowledge of insurance coverages, as the insured plant owner you should at least possess the basic knowledge which will enable you to determine whether you are under-insured or over-insured.

Some Folks Are Under-Insured

1. One of the most common causes of under-insurance is failure of the owner to review the value of his business. He may have started business 15 years ago with $50,000 worth of buildings, supplies, and equipment. Since that time, he has regularly mailed a check to cover that same amount of insurance. Not until a fire sweeps his plant does he realize that it will cost him $150,000 to replace his supplies, buildings, and equipment.

2. The business may have been recently, but inaccurately appraised. Amateur appraisal by the owner or or agent will most often show under-valuation of the business property. A professional appraiser will give the correct valuation of every piece of operating business equipment as well as an accurate appraisal of the value of the building. The sum of many small items will make an impressive total whose value is sometimes overlooked and should also be insured.

A good appraisal costs money. The appraisal fee on a building with a replacement cost of $20,000 would be approximately $120, with reappraisals about two-thirds of that amount. The fee depends on the replacement cost of the property. If the appraisal reveals an under-valuation of $10,000 which you promptly cover by increasing your insurance, the service is well worth the additional expense. The appraisal will substantiate your claim to the insurance company in the event of a fire loss. You will also know the correct valuation of your property in case of further improvements, or sale.

The creamery operator cannot rely on his book valuation of his business property to determine its correct insurable value. Book value begins with the original cost of acquisition. The present book value of a refrigerated truck, for example, equals the original price paid for it by the owner, less the full depreciation allowed for income tax purposes. This is obviously less than the actual, insurable value of the truck which equals its present new replacement value less a reasonable deduction for use and wear. If the price of a new refrigerated truck has increased $300 since purchase of the old one, the current new price must be taken into consideration in determining the truck's present insurable value. The same considerations apply to valuation of the operator's business buildings. Your up-to-date insurable values can only be determined accurately by a qualified appraiser.

3. The dairy plant owner may be under-insured because he believes

THE MARINE MIDLAND TRUST COMPANY OF NEW YORK

CHAMBERS STREET OFFICE
Chambers at West Broadway

JAMES M. KELLY - - *Assistant Vice-President*

WHEN SHIPPING DAIRY PRODUCTS TO NEW YORK YOU WILL FIND THE COLLECTION OF DRAFTS GREATLY FACILITATED IF THEY ARE DRAWN THROUGH OUR BANK. WE ARE LOCATED IN THE HEART OF NEW YORK'S WHOLESALE FOOD MARKETS AND ARE PREPARED TO OFFER FAST AND EFFICIENT SERVICE TO ALL SHIPPERS OF PERISHABLE FOODS.

We Cordially Invite Your Patronage

MEMBER

MARINE MIDLAND GROUP OF BANKS
FEDERAL RESERVE SYSTEM
NEW YORK CLEARING HOUSE ASSOCIATION
FEDERAL DEPOSIT INSURANCE CORPORATION

that the difference to a considerable extent will be made up by tax deduction in event of a fire loss. A building constructed in 1940, for example, at a cost of $20,000 could easily have an insurable value of $30,000 today. If insured for $20,000, in case of total loss he would suffer an actual business loss of $10,000. This loss is NOT deductible. The owner has not paid any taxes on the appreciated value of his building. As far as the Internal Revenue Bureau is concerned, there has been no tax deductible loss.

Under Valuation Can Hurt

4. Through increase in the value of your business property, you may be vulnerable to loss under the co-insurance clause of your insurance contract. The co-insurance, or "reduced rate average" clause, is one of the most generally misunderstood coverages in the entire insurance repertoire.

This clause definitely works to the advantage of the creamery operator who believes in full coverage. In return for his insuring a definite percentage of the full value of his property (60, 70, 80, or 90 per cent), the insurance company offers him a policy whose premium *rate* is substantially lower than that for straight fire insurance coverage. The assured in turn agrees to pay the premium required to insure to this stated percentage of the value of his property, increasing or decreasing his premium as the value of his property goes up or down.

The impression is widespread that 80% co-insurance, for example, means that the insurance company will pay only 80% of any loss, and the assured will pay 20%. This is an entirely incorrect impression. If the terms of the co-insurance clause are lived up to by the assured, he will collect his full loss up to the amount of the policy. An operator with a building valued at $20,000 who pays insurance on $16,000 of that valuation under an 80% co-insurance clause, will receive full compensation for any fire loss up to $16,000.

It is when the assured fails to live up to the terms of the co-insurance clause, that he must pay part of the loss in event of a fire. Assume that your $20,000 building, on which you originally purchased $16,000 worth of insurance under the 80% co-insurance clause, increased in value to $25,000 due to increased material and labor costs, and other factors. To fully live up to the terms of the co-insurance clause, the premium should be increased to cover $20,000 worth of insurance, or 80% of $25,000. It is the responsibility of the assured, not of the insurance company, to see that the correct amount of insurance is maintained.

Assume further that you have failed to increase your premium, and are still paying for only $16,000 of insurance on your $25,000 building under the 80% co-insurance clause. In event of fire, you will be able to recover only the percentage of the actual loss that $16,000 bears to $20,000. For a fire loss of $9,000, you would receive only $7,200 from the insurance company.

Losses are adjusted according to the actual cash value of the property at the time of the fire, not at the time the policy was issued. If the adjuster for the insurance company establishes that the coverage was insufficient, part of the loss must be sustained by the assured.

5. Through lack of knowledge of new and more favorable coverages, you may not be insured for some coverages which your present insurance budget could accommodate. It is the job of your insurance agent to let you know when new and better coverages are available, to give you the opportunity to change your program accordingly.

6. You may not be covered for property damage liability, loss of records, or business interruption. All these losses may be fully as severe as the immediate fire damage to your business property, and should be an integral part of any fire insurance program.

Some Folks Are Over-Insured

1. One of the most common causes of over-insurance is the existence of cross-coverages and overlapping policies. In almost every case, this is due to the owner's buying one form of policy from one insurance agent, and another policy from another agent. Since there are many different types of "package policies" combining several coverages, duplication may very easily occur. You may be paying money to different insurance companies for identical coverage.

2. You may be paying a higher premium than necessary due to special fire hazards which could be economically eliminated. The fire rating of a building is based on many points such as materials used in construction, proper wiring, presence of fire extinguishers, etc. Some cannot be altered, but others can be changed at a price which will be recovered through savings in the insurance premiums. The agent should review thoroughly all factors bearing on your fire rating and inform you of savings which can be made by elimination of fire hazards in your building.

3. Incorrect evaluation of property can just as readily throw your program out of balance on the over-insurance end of the scale. The insurance company will pay only for the actual value of the property insured. You may therefore be paying premiums for more than you can hope to collect in case of a loss. The actual value is based on new replacement cost less reasonable depreciation.

Here again, the value of professional appraisal will be apparent. Appraisal will save you money if you are paying premiums for more than the insurable value of your business property. In event of a fire loss, moreover, it will enable you to substantiate your claim to the satisfaction of the adjuster. You will be able to offer an up-to-date record of all insurable values which were lost as determined by a disinterested, qualified appraiser. The adjuster will usually not only accept such an appraisal, but he will welcome it.

4. The valuation of your property may be correct, but you may still be paying for more than you would ever expect to lose as a result of a fire. There would be no point in insuring the full value of a building if part of that value included the excavation and concrete walls of the basement. Other values such as a paved yard area, would also not be likely to be damaged by fire. Here again, appraisal will reveal just which values are vulnerable to loss and which ones need not be covered.

XUM

GEO. J. MEYER MANUFACTURING CO.

CUDAHY, WISCONSIN U. S. A.

Manufacturers of efficient bottling equipment for beverage plants, breweries and dairies

EDITORIALLY SPEAKING

(Continued from Page 20)

any doubts concerning Mr. Smith's ability. The source of our uneasiness is not a matter of personalities. Less than a year has elapsed since Public Law 774, with its provision for price stabilization, became the law of the land. Yet during that time one set of men in the dairy branch has left the organization and another set has taken their place. Ed Vial, Al Nixon, Fred Shipley, to name a few, have come and gone. They were sound, reliable men. They were not discharged. They left of their own volition. Why?

Setting up a fair price control program for our complex economy is a gigantic task. The only reason that it was undertaken in the first place was because of the threat that was inherent in a free wheeling inflationary spiral. Even here there was disagreement by competent men. Although the dangers of inflation were recognized by all thinking individuals the best method of meeting that threat was the source of deep controversy. Congress, in its wisdom, resolved the controversy in favor of price control. The circumstances attending the action of Congress, the generally dangerous deterioration of our relations with the Soviet Union that were responsible for the passage of 774, clearly indicated the intent of Congress; the legislation was designed to create an instrument for combatting inflation because inflation was one phase of the struggle in which we found ourselves engaged. There is no dodging the issue; OPS was created as an instrument of war. It was to be used for that purpose. The fact that in many cases, particularly in the case of S.R. 63, the idea of price regulation was used for fostering certain alterations in the social structure and for certain political ends, is the disturbing element in the picture.

It is our contention that OPS is a weapon of war. As such we can support it and bend our energies toward making it work. But as an instrument, seized upon by those working for social reform or to gain political advantage, it loses its reason for being. It is our guess that such a tendency, reaching its climax in S.R. 63, is the main reason why so many able men have not been able to stay longer in the ranks of OPS.

The Morning's Mail

Dear Sir:

In the October 1951 issue of the American Milk Review, on Page 60, an article appears under the heading of "Fiber Milk Containers Are Bottles" by Albert W. Gray. Continuing this article on Page 62, in the second paragraph, the statement is made that the Otto Milk Company is a subsidiary of the Dean Milk Company.

Now Mr. Myrick, we at the Otto Milk Company know Mr. Sam Dean because of visits we have made to Chicago, and naturally are interested in his paper operation because our businesses are somewhat similar. To the best of my information, Mr. Sam Dean is a very high type gentleman and is operating a most successful milk business, but that is as far as our connection with the Dean Milk Company may go. Certainly a speaking acquaintance does not constitute a financial interlock, and I should think before the *American Milk Review* would print this type of misleading statement, you would first verify its authenticity.

I am sure Mr. Sam Dean, as well as the writer, would appreciate your retraction of this statement in a correction at your earliest convenience.

Oscar F. Otto, Secretary-Treasurer.

●

Editor, Dear Mr. Myrick:

Supplementing Mr. Oscar Otto's letter of November 1, 1951.

We believe the article lends itself to certain inferences which are not entirely correct. In reading this article, one is bound to think that we, the Otto Milk Company, did not venture into the paper bottle field until the City of Washington changed its ordinance to include the sale of milk in paper bottles. This is definitely not a fact and we must inform you that plans for our venture into this new field were contemplated long in advance of any ordinance issued by the City of Washington, Pa., or any other city where we do business.

The article also infers after the City of Washington, Pa. changed its ordinance which excluded the delivery of milk in paper bottles, that, to use the exact words in the article, "In consequence the trade of the company collapsed". This statement can easily be construed to mean that we suffered the loss of all our business. The business we conducted then in the City of Washington, Pa., and also the business conducted by us in that city today is a very small percentage of the total business which we do.

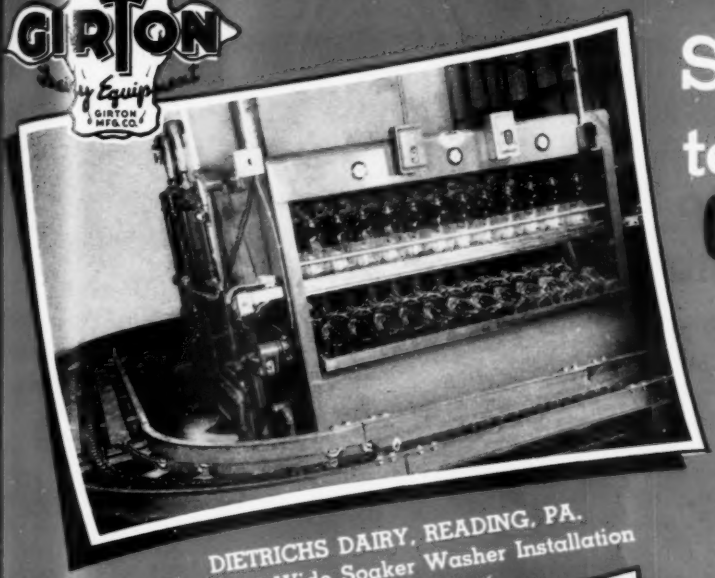
It might be well to mention here that we pioneered the paper bottle in Western Pennsylvania and its acceptance by the housewife at that time was greater than all expectations. The housewife today, and even back at the time when we pioneered the paper bottle, believes that progress was instituted in an industry which was dormant in this respect for many years. I would certainly like to see that justice is done our company and hope you will be kind enough to retract or correct certain of your statements in the next issue of the *American Milk Review*.

John Martin, Controller.

Our apologies to the Otto Milk Company and the Dean Milk Company for inadvertantly describing a relationship which does not exist. The statement that the Otto Milk Company is a subsidiary of the Dean Milk Company is entirely incorrect and a most embarrassing error on our part.

GIRTON
Dairy Equipment
GIRTON MFG. CO.

Satisfied Users tell the story of GIRTON SOAKER WASHERS!

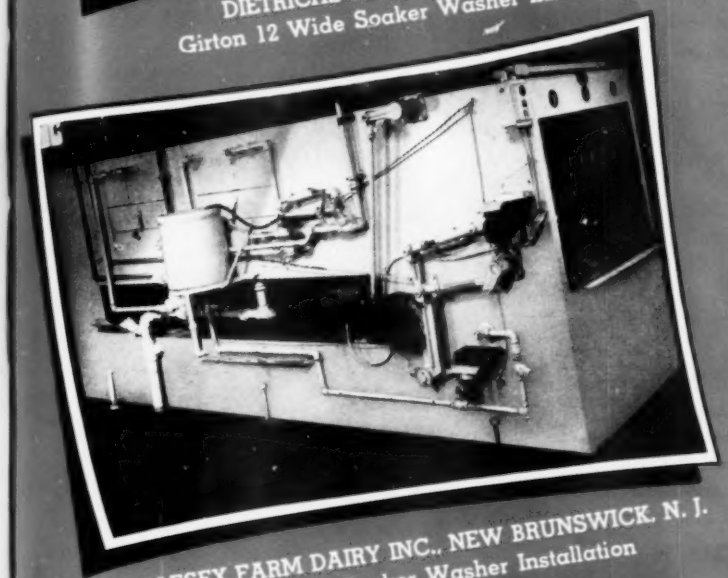


DIETRICHS DAIRY, READING, PA.
Girton 12 Wide Soaker Washer Installation

Hundreds of satisfied users are the biggest boosters of Girton Soaker Washers. Large plants, medium size plants, small plants . . . each has found the specific washer that best suits its particular needs.

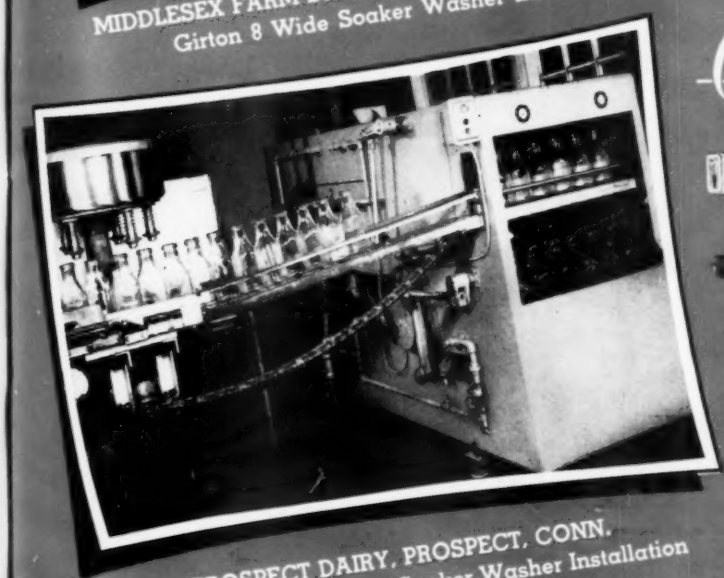
Do you have a problem of limited space? Are you interested in operating economy and low labor costs? Do you have a problem of bottle size or shape? Ask Girton for the modern up-to-date answer. There's a Girton Soaker to wash every size—every shape. Capacities from 960 to 7560 bottles per hour.

WRITE FOR BULLETIN

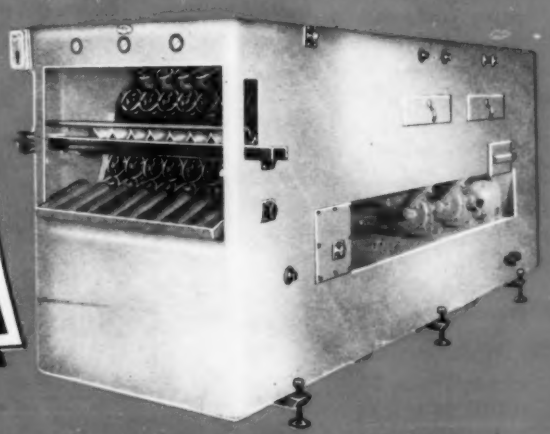


MIDDLESEX FARM DAIRY INC., NEW BRUNSWICK, N. J.
Girton 8 Wide Soaker Washer Installation

GIRTON MANUFACTURING COMPANY
• MILLVILLE, PA.



PROSPECT DAIRY, PROSPECT, CONN.
Girton 6 Wide S A Model Soaker Washer Installation



XUM

Centrifuge to Standardize and Clarify Simultaneously Developed

Importance of Standardization in Fluid Milk Industry Emphasized by Introduction of New Machine

By NORMAN MYRICK

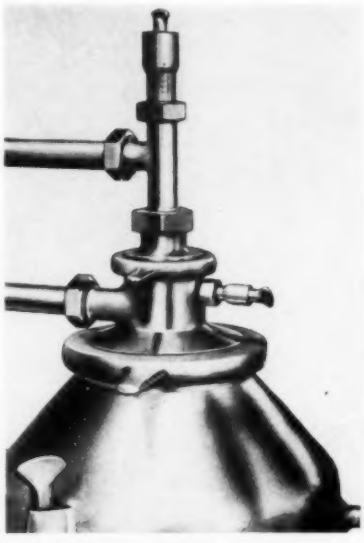
TWO NEW pieces of equipment made their debut in September. Both are worthy of more than passing interest and both, curiously enough, are manufactured in Pennsylvania. A centrifuge that will standardize, clarify, and separate with only minor changes necessary to change from one operation to another has been developed by the Sharples Corporation. A device for removing entrapped air and volatile odors from milk, called a vacuumizer has been put on the market by the Chester Dairy Equipment Company. Last month we discussed the vacuumizer. This month we take a look at the centrifuge.

The popular acceptance of homogenized milk has been an outstanding factor in the milk business over the past decade. As sales of homo zoomed to startling new levels the importance of the cream line diminished. The trend toward the use of paper containers, particularly in the stores, had an added influence on the shift away from emphasis on the cream line. As a result of these developments the practice of standardizing the butterfat content of market milk has been adopted by a constantly growing number of processors. Standardization has reached the point today where all but a very few states recognize it as a part of the milk processing industry.

While standardization is not new, accomplishing it by the use of a centrifuge is a rather recent development. What the Sharples people have done is to develop a machine, based on the principles of centrifugal force, that will standardize and clarify at the same time, clarify only, or separate only. When used for any purpose the machine can handle either hot or cold milk. The same machine using the same bowl assembly, performs all three tasks. The change from one arrangement to another is accomplished while the machine is in operation by the external adjustment of two valves and adjustment of feed rate.

How It Works

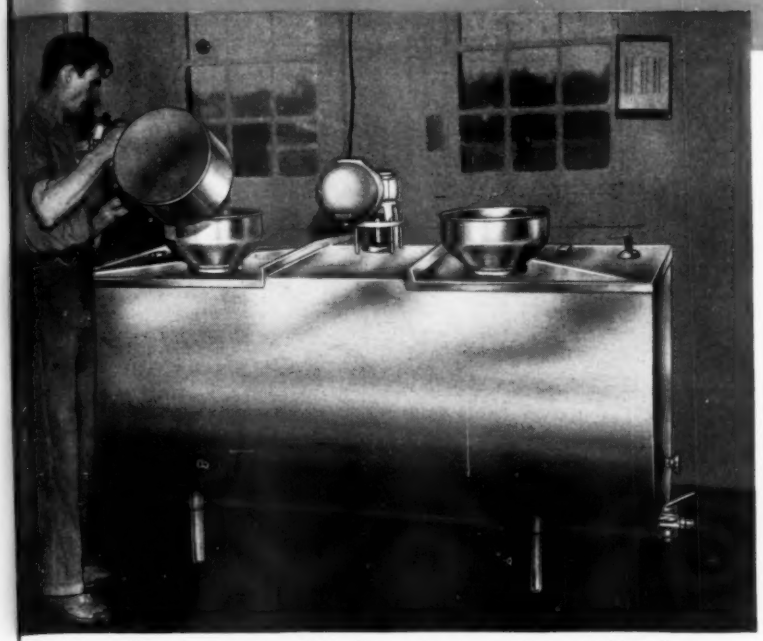
In external appearance the machine bears a close resemblance to a regular separator. There have, however, been some changes in the design of the bowl and outlet assemblies. The significant innovation is the standardizer valve, a calibrated, adjustable valve that operates in the area connecting the cream outlet housing and the skim milk outlet housing. When the machine is set to clarify and standardize simultaneously it is also doing a partial job of separating. A portion of the cream rises through the discs just as it does in an ordinary separating operation. However, there is a higher head pressure on the cream outlet than on the milk outlet. This difference in pressure forces the desired portion of cream back into the milk outlet housing. In a conventional separator the cream and the milk outlet housings are sealed off from one another. In this new machine a channel has been provided which may be opened or closed by external adjustment of the standardizer valve. When the valve is open some of the cream will flow through the channel and discharge with the partially skimmed milk. The valve permits adjustment of the butterfat in the resulting standardized product. When it is closed complete separation can be obtained by reducing the feed rate to the machine. The butterfat content of the cream discharge is adjusted by valve cream regulating. Reports from dairy plants using the machine indicate a high degree of accuracy in the butterfat content of the standardized product.



In external appearance the new centrifuge does not differ from a regular separator. This photograph shows the standardizer valve at left center.

The machine will standardize milk at temperatures that range from 40 degrees F. to 160 degrees F. The machine can be adjusted to the temperature of the milk in order to achieve the required butterfat content. The automatic temperature

Put Your Receiving Room on Wheels . . . and say Goodbye to Milk Cans



Emptying milking bucket into 300 gallon Mojonnier Producers Cold-Wall Tank. Milk is quickly cooled to 38°F. Pump is used to transfer milk to truck tank.

1800 gallon bulk pick-up tank mounted on straight frame truck. Pump for transferring milk, and sample bottles, are carried in sanitary refrigerated compartments mounted at rear of truck.

The bulk handling of milk from farm to milk plant is rapidly supplanting the milk can in many sections of the country, because of its economy and simplicity and because it assures a better quality milk supply.

On the Farm, spillage and stickage losses are eliminated, milk quality is improved by rapid cooling to low temperature, labor is saved. Milk is "weighed" in farm milk house, avoiding misunderstandings and disputes between milk producer and buyer over amount of milk shipped.

In the Milk Plant the receiving room operation is eliminated, milk is received at temperatures of 40°F. and lower, milk can be processed directly out of truck tank, truck tank can be used for auxilliary storage purposes, and milk quality is greatly improved.

The Bulk Tank Truck can pick up from 50% to 100% more milk. No heavy lifting is involved so that older men and men of slight build can operate the truck. Hauling costs are often less.

Mojonnier Bros. Co., pioneer developers of bulk milk equipment, offers a complete line of Cold-Wall Tanks for the farm, and specialized tanker equipment for milk route operation.

Complete bulk handling information sent on request. Also, for name of nearest Mojonnier Bulk Milk System operation, write today to:

MOJONNIER BROS. CO.
4601 WEST OHIO STREET
CHICAGO 44, ILLINOIS

Mojonnier

BULK MILK SYSTEMS

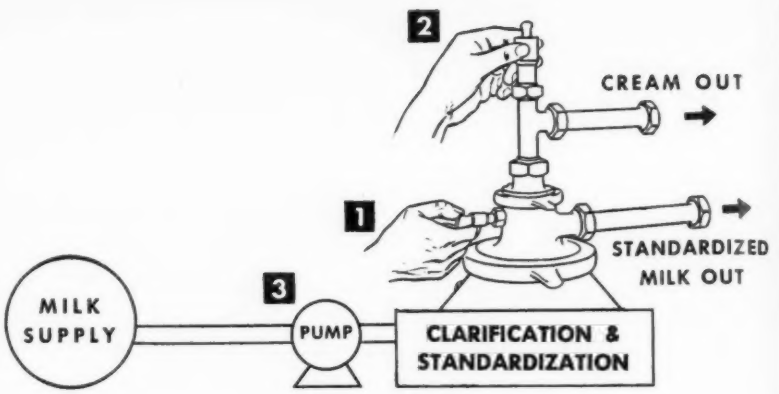
XUM

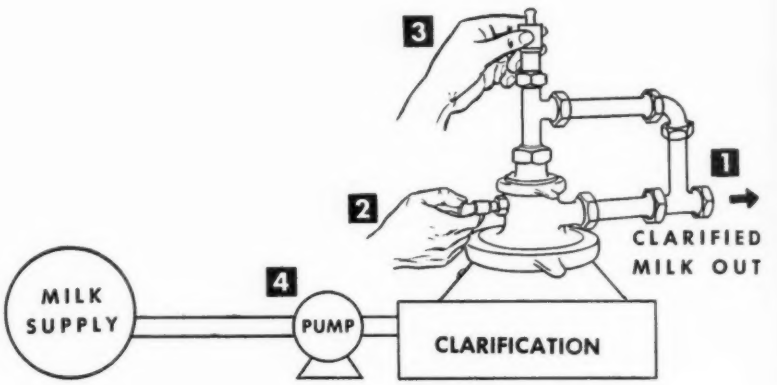
blending in the milk supply, usually available through the use of a milk storage tank, is of considerable assistance in controlling this factor. When hot milk is to be handled, from the regulator section of a high temperature short time unit, for example, the temperature control will also be taken care of automatically.

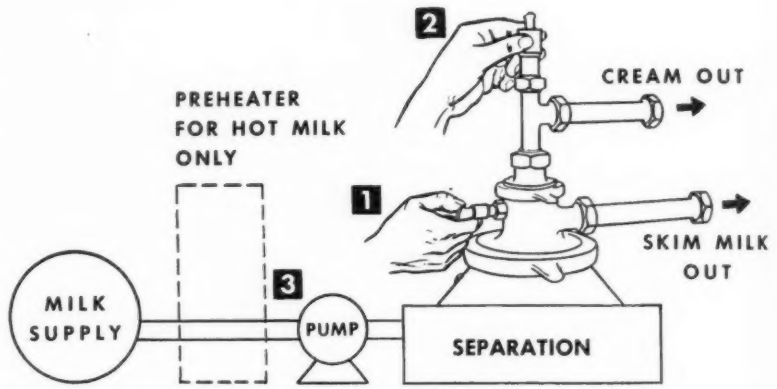
The milk entering the machine for standardization must be of a known butterfat content that remains constant within the limits of a .5% variation. In other words the milk being fed into the standardizer-clarifier should come from a tank of milk that has been well agitated, the butterfat content of which is known, and the temperature of which remains constant within 4 degrees F. Under these conditions the machine will produce a standardized product that will hit the desired proportion of fat right on the button subject to a maximum variation of plus or minus .05%. Excess fat is drawn off as cream containing up to 40% butterfat.

Operation of the Standardizer

The standardizer, that is the valve that regulates the amount of cream that flows back into the milk, is similar in appearance to a regular cream adjusting valve and is equipped with a vernier scale. Milk is fed into the machine by means of a positive displacement pump just as in the case of regular separator. When preparing for a standardizing-clarifying operation the operator starts the agitator in the holding tank about 45 minutes before feeding milk into the machine. The standardizer is set at about the middle of the scale and the machine is started as though ordinary separation is to be performed. The cream regulating valve is adjusted until the cream contains the desired butterfat. When the system has reached equilibrium a representative sample of milk may be taken and a Babcock test made. If the test shows too little fat the standardizer is further opened. If the test shows too much fat the standardizer is adjusted accordingly. When the desired result is reached the machine will operate on that basis, as long as the milk being fed into it remains constant within the limits already mentioned. The operator can check the standardized product once the operation is underway by measuring the time it takes to fill a sample bottle with cream from the cream discharge. As a result of daily operational experience plant men become sufficiently familiar with the equipment to make these adjustments by visual check of the amount and consistency of the cream discharge in much the same manner as when operating a regular cream separator.







The cream taken during the standardizing operation, from milk at normal storage temperatures, is a high quality product of a caliber usually associated with cold milk separation. The advantages in this type of cream, increased viscosity, low acidity, and freedom from rancidity caused by action of the lipase enzyme are well known by milk plant operators.

There are three models of this machine with performance records as follows:

	Separate lbs./hr.			
	Hot (85° F.)	Cold (40° F.)	Clarify	Standardize and Clarify
R-20MP	11,000	6,000	11,000	11,000
R-15MP	7,000	4,000	7,500	7,500
R-10MP	3,500	2,000	4,500	4,500

DAIRY CONTAINER DIVISION
OWENS-ILLINOIS GLASS COMPANY
TOLEDO 1, OHIO

Delivery Fleet Operation Needs a Good Overhauling

GMC Survey Finds Retail Milk Trucks Source of Big Snafu

MILK Industry Foundation members were told at their annual convention that a new concept of transportation costs in their business would lead to greater efficiency in collecting and distributing milk, and gain important public recognition of the tremendous job they are doing in the national interest.

A Transportation Survey Group from the GMC Truck & Coach Division of General Motors and its advertising counsel the Kudner Agency, Inc., reported to convention delegates that a survey of several "test" dairies had disclosed some new opportunities for further efficiency to strengthen the industry and expand already great benefits to consumers.

The transportation survey for the milk dealers was a new phase in the survey work originated by GMC Truck and Kudner last year for the National-American Wholesale Grocers Association.

Out of such transportation analysis work for the grocery wholesalers and dairies has come a new concept of the value of transportation as it relates to the cost of the product transported, it was explained by W. L. Vande Water, GMC Truck Merchandising Manager, who introduced the subject and the other two survey experts.

Years ago when manufacture was limited to the processing of raw materials found adjacent to the factory, statisticians measuring the growth of American business developed the term "Value Added by Manufacture" because the finished product of one factory was so often then ready for the consumer, Vande Water said. "We now need to popularize a new statistical concept: 'Value added by Transportation'," he said, "because rapid developments in the complex industrial growth of the nation have often made the finished product of one factory only the raw product or component for another, with transportation the important link between them.

"Today, in all industry, we have no true measure of the 'Value added by Transportation.' This is a grave misfortune in the milk industry for two important reasons. It enables demagogues to make out quite a case on the middleman's spread as though it were all profit and second, it conceals or minimizes the opportunity for transportation savings because nowhere can we find a comprehensive picture of the whole problem."

Vande Water recommended that as still greater transportation demands are made on the milk industry as it expands, a full understanding be gained of total costs entailed, opportunities for economy, and the most economical and efficient plan for future reorganization and expansion.

The GMC Truck-Kudner survey was made in several dairies of different sizes and types and the report today was of the preliminary findings of the research team.

In the field of transportation management, the researchers did not find the same degree of imagination, resourcefulness, analysis nor control which existed elsewhere in the milk business, according to Mage Smith, who presented a new approach to route costs analysis which measured both "points" and net profit.

Smith said they found: No instance of delivery costs on a route basis; several instances of failure to cost individual vehicles; rivalry between sales and transportation which worked to the disadvantage of both; frequent subordination of delivery considerations to sales consideration which in adequate knowledge of the cost factors involved; and instances in which vehicle maintenance, and even decisions as to vehicle replacement were influenced to an undue degree by sales.

Smith said that while milk delivery expense was three percent of the sales dollar, it represented 16 per cent of the costs over which management had any amount of control. He pointed out that the 16 per cent offered a virtually untapped opportunity for cost savings and related as an example a difference of 2.3 cents per mile in gasoline costs alone between two branches of a multi-branch dairy operation that was studied. Trucks in the comparison were of the same make, model, age and mileage, "but if through efficient maintenance and driver training, gasoline costs at the high cost branch had been kept at the level of the average branch, it would have resulted in an annual sav-

"... We have found both of these crates to be the most sanitary cases available. They are absolutely sanitary. They can be easily cleaned and disinfected."

"... It is the most sanitary crate on the market, being kept grime-and-odor-free by virtue of its zinc coating, which prevents rust and crevices that would otherwise harbor bacteria."

"... The ——— City Health Authorities have put their approval on these steel crates due to their sanitary features in cleaning, and owing to the fact they will not rust."

Sanitation is Simple

... say these users

WHEN YOU USE UNITED STEEL MILK CASES

"... We find that the wire cases with the galvanized finish are not only much lighter and cheaper to use, but also more sanitary."

"... we have been using wire cases exclusively for a long period of time because of the sanitary features, light weight, and long life of these wire cases."

United Steel Milk Cases *are* more sanitary because there are no crevices in which bacteria and vermin can hide . . . no place for refuse to cling. United Cases are quickly, efficiently cleaned . . . they dry quicker . . . never rot, because they can't hold moisture. There are other reasons for dairymens' preference for United Cases:

1. **They're lighter in weight, a lot less bulky. This makes United Steel Cases easier, faster to handle, cuts handling costs to a minimum.**
2. **They're economical . . . in first cost, in replacement cost. United Cases are stronger, last longer — you spend less than half as much for United Cases in a ten year period.**

You can prove these facts to yourself through use. For full information write Dept. AM.

Names of letter writers on request.

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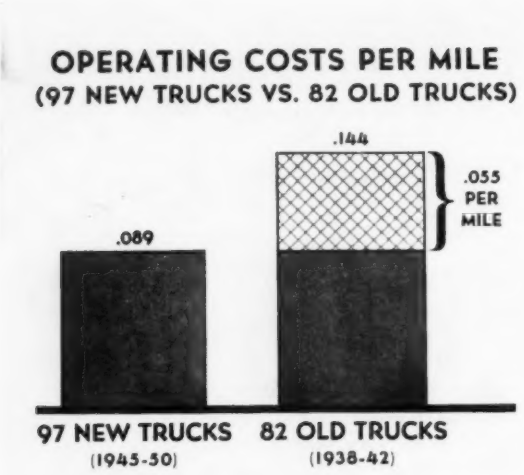
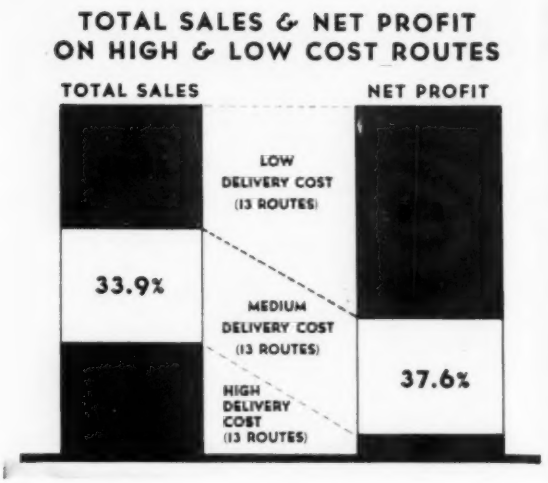




ings of $1,400, equal to the net profit on three retail routes," Smith said.

In another study, retail delivery costs in a multi-branch operation ranged in the various branches from 60 cents to $1.53 per 100 points, suggesting that the major correctives for the wide cost differences were to be found in the realm of sales strategy rather than in improved vehicle maintenance and performance.

Smith also showed what high delivery costs did to individual route profits. In one particular dairy, six of its 39 routes had a delivery cost of four per cent or more of total sales, with resulting loss of profit. Placing the dairy's 39 routes into three groups of 13 routes each, one group accounted for 34.5 per cent of total sales and 61.2 per cent of net profits; a second group had 33.9 per cent of total sales and 37.6 per cent of net profit, while the third group had 31.6 per cent of sales but only 1.2 per cent of net profit.

Smith then went into individual vehicle studies, comparing operating costs between 97 new trucks and 82 old trucks all of the same make and model. The 82 trucks of 1938-42 vintage cost an average of 14.4 cents per mile to operate, while the 1945-50 models cost only 8.9 cents per mile, or an annual difference amounting to approximately $25,000.

R. T. Jennings, of GMC Truck, told the delegates that failure to apply simple Preventive Maintenance effectively to their truck fleets was throwing per-mile costs in many instances far higher than even the large over-the-road haulers.

"Even with your low horsepower, small trucks averaging between 8,000 and 12,000 pounds gross weight and traveling very few miles per year, you are on the average incurring operating and maintenance expense that far exceeds similar expenses incurred by over-the-road carriers operating 150-horsepower Diesel trucks grossing 55,000 pounds," Jennings said. "In some dairies we found this expense more than five times that of the over-the-road hauler who used big trucks."

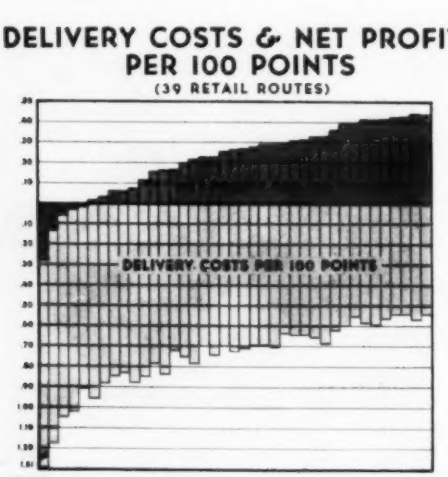
"If what we saw generally is typical of the entire industry, it can be said with reasonable safety that the average dairy fleet is not being properly cared for and one big reason for this is insufficient or poorly applied personnel. The maintenance staffs in far too many operations are using all their time trying to keep even with the daily problems without being able to get ahead of them and do constructive maintenance work."

Jennings pointed out opportunities for savings in one dairy of $1170 on fuel costs alone, an amount representing profit on 351,000 quarts of milk. In this fleet of 35 vehicles of comparable size, they ranged from 2.4 to 6.9 miles per gallon for an average of 4.7 miles per gallon.

"Yet if the 12 trucks in this fleet that were poorest in performance were brought up only to this rather low fleet average, the savings in fuel costs alone would be $1170 per year," Jennings explained.

A lack of good fleet history records and good Preventive Maintenance pro-

(Please turn to Page 85)



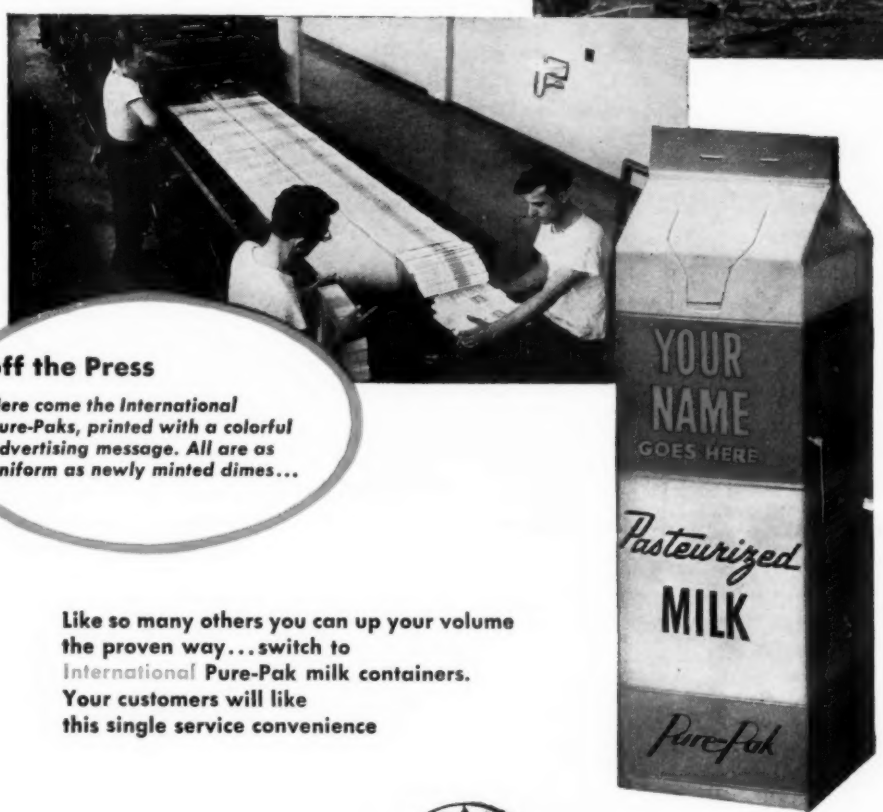
Delivery costs represent about 16 percent of the costs that it is within the power of management to control. The importance of this 16 percent is shown by the accompanying chart. The relationship between delivery costs and net profits stands out sharply.

CONTROL MAKES THE DIFFERENCE!

INTERNATIONAL PURE-PAKS* are produced under the strictest control from the seedlings, through the woodlands, to the finished product... International Pure-Pak Milk Containers.

Trees are Chosen

This graduate forester—one of the hundreds of the International team—is marking trees for selective cutting. Only the finest pulpwood trees are sent to International's plants for the manufacture of Pure-Paks



Hot off the Press

Here come the International Pure-Paks, printed with a colorful advertising message. All are as uniform as newly minted dimes...

Like so many others you can up your volume the proven way...switch to International Pure-Pak milk containers. Your customers will like this single service convenience

INTERNATIONAL PAPER COMPANY
SINGLE SERVICE DIVISION
NEW YORK 17, N. Y.

*Reg. by Excello Corp. of America

IT'S THE WIVES WHO REALLY COUNT!

The Hand That Rocks The Cradle Can Also Help With The Old Man's Attitude Toward His Job But She's Got To Believe In the Job First

By ERNEST W. FAIR

Exclusive feature AMR

"When a good employee starts slipping and looking like a sheep at the slaughter house who knows what's coming, don't bother with him . . . go ask his wife what's wrong!"

That's what one veteran mid-western dairy products plant executive does and as a result he has few troubles with unhappy employees. He gets at the seat of the employee's dissatisfaction quickly and accurately.

It's not a new idea, this giving as much attention to the wives of employees as we do to our employees, but it isn't practiced enough.

Keep the wife and family happy and pleased with the idea that Joe is working for a good firm and a good boss and they'll see to it that Joe likes his job and does his best. It's a theory time-tested in may industries.

We've talked with many business leaders in many industries about this phase of good management lately and the experience they have gained through years of practice of the very worthwhile idea of recognizing the wives as semi-employees are condensed in paragraphs below.

"I make it a point to know my employee's wife from the very start," one executive explains, "right after he's hired the Mrs. and I drop by for an informal visit one evening just for a get-acquainted chat on the lawn. We bring along a quart of ice cream and everybody has an old fashioned good time.

"That gives us all a contact with one another. To this new employee's wife the boss isn't just some mythical ogre but a real flesh-and-blood person she knows. You can be sure such little visits help make our employees a lot better employees because things are right at home insofar as their jobs are concerned."

Another firm holds a semi-annual party for families and calls in the wives of employees to plan all details of the party. Another holds seasonal picnics and parties and sends the invitations to the wives . . . that insures a full turn out.

This Deal They Like

Recently a southern firm held open-house in its new building. Instead of hiring professional models as hostesses it picked out the best-looking wives of employees, rented evening gowns for them and had them act as official hostesses for the celebration. They were paid regular professional model fees for their stints.

When an eastern firm finds its business slipping a little it holds all of the conventional sales contests among its employees but goes one step further . . . it has one for the wives of salesmen too . . . and the business they unearth is very worthwhile. The contests are never held in competition with the husbands . . . all fear the results might be disasterous!

"Nagging wives exist very much in real life and all of them aren't on television or in the movies," one business man told us, "and a nagging wife who doesn't like the firm her husband is working for or thinks he's being mistreated can make a good man as worthless as an empty beer bottle at a lodge picnic.

"We see to it that the wives know all about us and all about the business from the very first by having regular social affairs for them and telling them what's going on.

"Every wife of every employee has been all through the business on a personally conducted tour by her husband's immediate supervisor. She's given advertising and literature we put out to tell our customers what a nice firm we are.

"And we see to it that when there's a promotion made, a salary raise issued or any other award of merit for an employee the wife is in on it too . . . she's told how much we appreciate her spouse and how well he's doing.

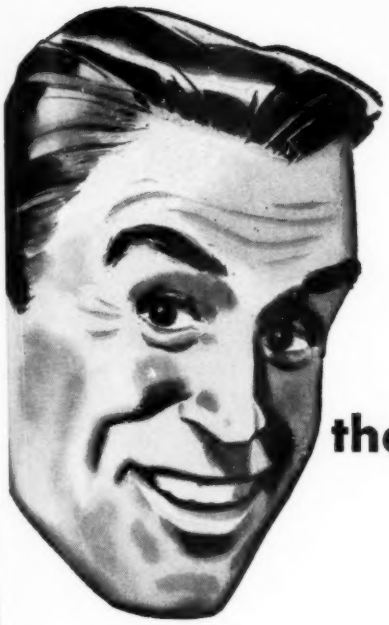
"That way friend husband gets a good send-off from his breakfast table every morning instead of some nagging about looking for a better job or what crooks his employers are!"

One executive friend of ours takes time off every now and then just to go visiting among employee's wives. He's never run into any trouble about the green-eyed dragon of jealousy or suspicion yet and he's done a wonderful job of missionary work.

"When one of our employees is having money troubles you can bet your bottom dollar he won't come to me," another executive friend told us the other day, "he'll go home and make a row with the family or seek out some money shark somewhere and only get in trouble a lot deeper.

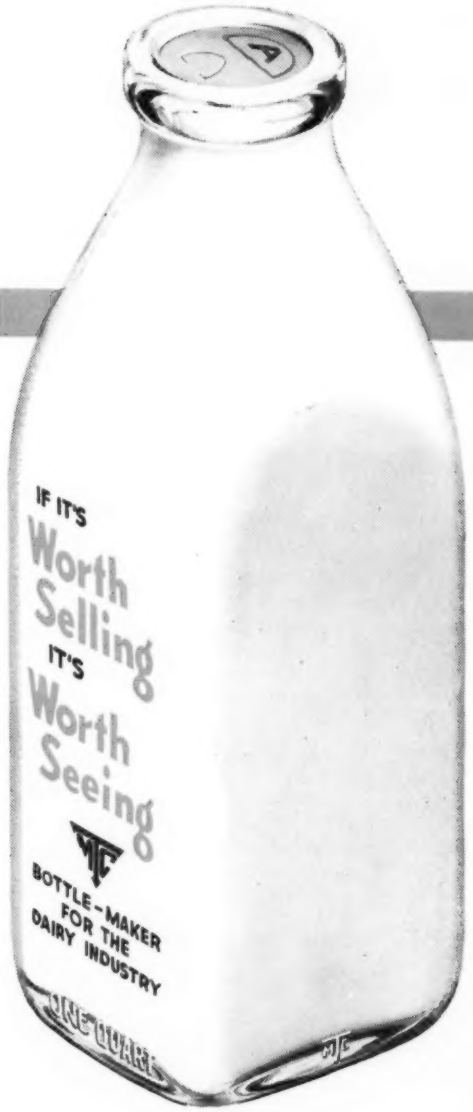
"That's why I see to it a report is made to me right away when it's obvious that some employee is having a bad time of it with some of his

Ernest W. Fair is a professional business writer. With headquarters in Oklahoma he makes the mid-west his beat. In this article "It's the Wives Who Really Count," Mr. Fair brings you the results of his observations in a score of different industries. It's the old adage about the hand that rocks the cradle.



GLASS BOTTLES ARE BEST

there's no new equipment to buy



Do glass bottles cost less? You bet they do — and here are two sound reasons why:

- **FIRST** Glass Bottles make use of your present facilities — there's no new equipment to buy or lease!
- **SECOND** Glass Bottles cost far less than other dairy containers because they make so many round trips!

Lower your operating costs — don't add to them! — by selling your milk in economical glass bottles. Just make certain you buy the best. Specify Thatcher Glass Milk Bottles.

THATCHER GLASS
MANUFACTURING COMPANY, INC.
Factories: Elmira, N.Y., Streator, Ill., Lawrenceburg, Ind.

Sales Offices: BOSTON NEW YORK BUFFALO PHILADELPHIA CHICAGO ROCHESTER, N.Y. CINCINNATI ST. LOUIS DETROIT ST. PAUL LOUISVILLE WASHINGTON, D.C.

personal problems. I don't try to talk to him because I know he won't level with me.

"First thing I do is hop in my car and go see the real head of the house —the wife. Sometimes it takes a bit of doing to get her to break down and tell me what the trouble is but eventually she will. When she does it's always something that can be fixed with a little help."

You Know How It Is

There's no question but that any extra time or effort expended to obtain the full co-operation of the Mrs. of every employee pays off, we have been assured by every business man with whom we have talked. The important thing, all agree, is full recognition by management of a firm that the wife of the employee plays a very important part in contributing to her husband's abilities as a good employee.

"I like it a lot better myself," one such employee told us. "There wasn't any thing like this with the firm I worked at before and Ellen was always quick to view the firm and its owners in a dark light when things didn't go to suit us. My boss never had a chance with her . . . she listened to a lot of her friends telling about what bad employers their husbands had and how their husbands were misunderstood and maltreated and just automatically applied the same thing to my boss.

"But here it's different . . . she's met the boss and his wife and thinks they are swell people. She's seen the place where I work and the conditions under which I work and know they are as good as her own at home.

"When she goes to her bridge club she's always spreading the gospel about what a wonderful firm I work for and how nice they treat me. Also, my friend, to be quite frank, things are a lot better at home now too . . . I haven't heard one of those dinner table lectures on how I should go out and get a better job working for some one else in a long time!"

Pests and Profit

Some firms even extend this business of making sure employees have freedom in their home life from troubles about their jobs and the boss by taking the children into consideration once in a while. Most do it with an annual Christmas party and some picnics now and then. Needless to say the wives and mothers do the planning and put the affair over.

"Some wives can be down right pests in such a program," we were also told, "but Mrs. Pest is a rarity and she just has to be handled differently. When we're up against that type of women we just grit our teeth and bear it because we keep thinking of the twenty other wives who are wonderful co-operative little angels!"

Taking the Mrs. in as an active partner is a sure way of making certain there are no misunderstandings at home about the firm or her husband's job. Having her on our side, helping to keep her husband happy on the job, is a sure way to achieve that blessed condition of a perfect staff with every guy content and happy at his job.

There's no question about it—It's the Wives Who Really Count!

KUVER TOP
MID-WEST Bottle Cap Co.
BELVIDERE
here's how you
SAVE MONEY
with
KuverTOP
A MID-WEST PROTECTIVE CLOSURE
FOR THE SMALL OR LARGE PLANT
Low-cost equipment — KuverTOP capping heads range in price from $85 to $155 per head. There's no other equipment needed to secure the Grade A protection of KuverTOPS. Heads are easily interchanged with present cappers.
No costly rental charges — When you buy 'em, they're yours. There's always a good resale value on cappers, too. Should you want to sell your equipment in the future, you can count on getting back a part of your low original investment.
Single capping — One-operation capping cuts bottle breakage . . . keeps product loss to a minimum.
Saves valuable floor space — Capping heads, which fit your present filler, are only equipment necessary. No additional floor space is required.
Efficient operation — This hard shell-like closure clicks like clockwork . . . provides dependable, sanitary capping.
Easy product identification — The rigid, wax-saturated KuverTOP shells come in eight different colors. Instant product identification saves valuable time . . . saves work on the route and in the cooling and loading-out rooms.
The housewife likes KuverTOPS — Obvious sanitary protection and convenience in use (KuverTOPS are easy to remove and easy to reseal in the home) make a hit with the consumer. Yes, you can assure a lot more customer advantages for a lot less investment with KuverTOP.
Egg-nog season is here. Just a reminder to "cash in" on this profit-making by-product. Remember, you can't sell it if you haven't got it . . . and your customers are wanting it now.
MID-WEST BOTTLE CAP CO.
Belvidere • Illinois
MID-WEST

AMERICAN STORES COMPANY . . . BEATRICE FOODS COMPANY . . . CUDAHY PACKING COMPANY

DILBERT BROS. . . . . FAIRMONT FOODS COMPANY . . . . THE KROGER COMPANY

LAND O' LAKES CREAMERIES . . . JEWEL FOOD STORES . . . H. C. BOHACK COMPANY, INC.

BORDEN COMPANY

ARMOUR & COMPANY

GRISTEDE BROS.

SAFEWAY STORES, INC.

WILSON & CO.

SWIFT & COMPANY

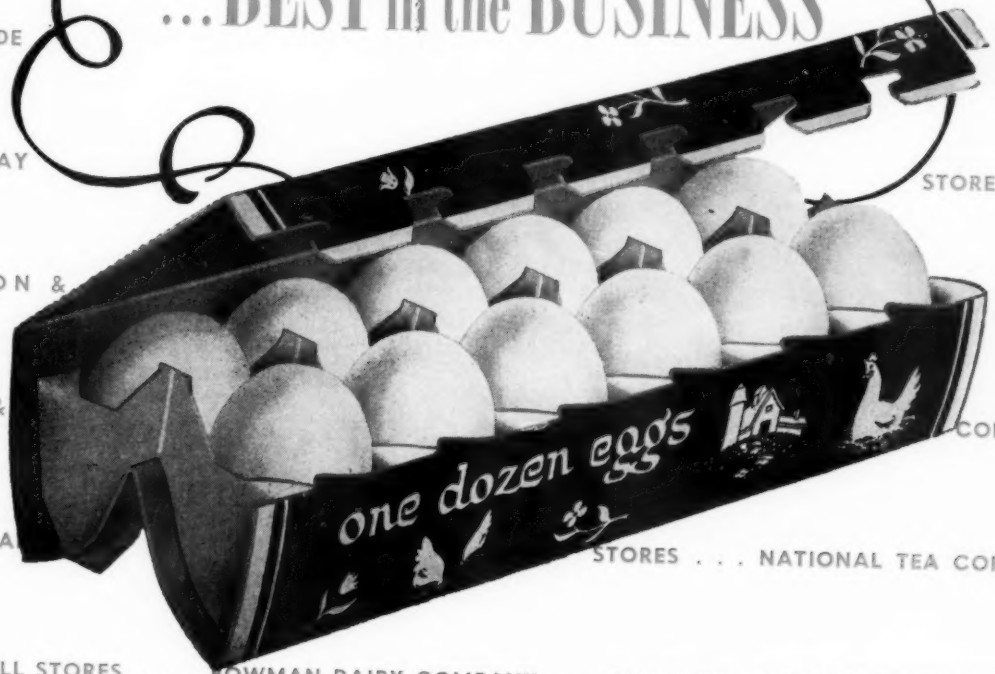
COLONIAL STORES . . . NATIONAL TEA COMPANY

H. G. HILL STORES . . . BOWMAN DAIRY COMPANY . . . CHESTNUT FARMS-CHEVY CHASE DAIRY

SELF-LOCKING EGG CUSHION CARTONS

Used by the

...BEST in the BUSINESS



..... SELF-LOCKING CARTON CO. .....

Division of
Shellmar Products Corporation

585 E. Illinois Street **Telephone: SUPerior 3886** **Chicago 11, Illinois**

★ *Pacemaker in Egg Packaging* ★

S. A. Harwood, on the left, is shown presenting $100 in cash to a winner in Purity Creamery's Social Security Lucky Number contest. Behind the men is one of the signs stationed at all Purity retail outlets throughout the city. The day's numbers and the previous day's numbers are listed on the blackboards.

By HARRY E. SHUBERT

It Gives A Lot But Costs Little

Built Around Social Security Numbers This Unique Radio Contest Has Given a Healthy Boost to Milk Sales

"IF YOU'RE GOING to sponsor a contest, sponsor one that gives a lot and costs you very little." That was the advice of S. A. Harwood, co-owner of Purity Creamery, Denver, Colo.

A contest that cost only a slight increase in Purity's radio advertising costs but has the potential of giving away several hundred dollars weekly has paid off handsomely according to Harwood.

Ten social security numbers furnished by Azreal Advertising Agency, Baltimore, are read off each day on Purity spot announcements on station KTLN. The numbers then are posted on blackboards at the 12 Purity Creamery retail outlets throughout the city.

Customers whose numbers match with those announced on the station or shown in the stores win $100. They must bring the numbers to KTLN for certification, and the station pays them the $100. Purity Creamery's cost is only a slight boost in the advertising costs.

The numbers are read on three announcements daily and hold good for 24 hours. Listeners who call in to have the numbers repeated are told to go to the nearest Purity Creamery where they can see the list.

Only the last four figures of the nine-number Social Security listings need agree with those announced. Listings supplied daily by Azreal are drawn from the Mountain States region only.

Results of the contest have been very good, according to Harwood. "Although there is a seasonal increase in business, we know that last year's increases were not as great. We've gained many new customers who buy at Purity regularly now that they have seen the contest, while formerly they were only occasional buyers."

Purity, a combination wholesale and retail milk and milk products distributor, has twelve retail stores spread throughout the city, all equipped with fountain service and large take-out creamery installations. They do not deliver door-to-door. In addition to their own retail stores which are controlled by the firm itself, Purity sells wholesale to a few scattered grocery and creamery stores throughout the city.

Owners of the firm are S. A. Harwood, his son C. R., and James MacDonald.

Milk and cream is purchased from nearby farms and is processed at Purity's plant. Ice cream is also manufactured at the plant and then delivered to the retail stores.

"We rent the buildings," said Harwood, "and my partners and I control them through daily visits. We have tried to establish the stores at strategic locations throughout the city."

Purity's principal advertising slogan is "There's one near you." Competition with firms that work primarily or exclusively on a delivery basis is stiff, Harwood pointed out; however, that constant reminder that a Purity Creamery is no more than a few blocks away has put us in a position where we are one of the five major dairy plants in the city.

"Though a few of the stores have added packaged bakery goods and ready-made sandwiches at the fountains,

we are still trying to stick as closely to the cream and milk business as possible."

Harwood stated that these other items had been added only in stores where restaurants were a great distance away. They only offer a service to school children and residents who need a quick snack.

●

CINCINNATI DAIRY EXECUTIVE

William F. Funke, 49, secretary-treasurer of the Hyde Park Dairy Co., was stricken Sunday, October 28, while at dinner, visiting with friends. While eating, Mr. Funke complained of pains in his chest and decided to go for a walk. He collapsed on the sidewalk after walking about two hundred feet from the house. The Deer Park lifesaving squad carried the victim back to the home he was visiting, where he was pronounced dead.

The late William G. Funke founded the concern more than forty years ago, and William F. Funke has been active in the dairy business for thirty years. A native of Cincinnati, Funke had lived at 722 Wooster Pike, Terrace Park, and was serving his second term as councilman for the community. He was president of the Cincinnati Milk Exchange, an organization of small dairies, and was on the board of the Ohio Dairy Products Association. He also was a one-time secretary-treasurer of the Universal Milk Bottle Service, Inc., of Cincinnati, and a member of the Oakley Masonic Lodge.

Surviving are his widow, Mrs. Alice Funke, and a son, William F. Funke, Jr., a student at Ohio State University.

●

DEALERS USING TELEVISION

Filmed television programming is the answer to the regional advertiser who wishes to allocate part of his budget for video.

Pevely Dairy of St. Louis has discovered that good programming is available at a reasonable price to compete with the giant extravaganzas from New York and Hollywood.

Pevely is currently sponsoring "The Chimps," a comedy series enacted entirely by chimpanzees with human voices on the soundtrack. "The Chimps" is distributed by United Television Programs, one of the leaders in TV film distribution.

Milton Blink, executive director of United Television programs, says of his firm's product: "Taking today's costs as an example, a good half-hour dramatic show can be produced on film for $10,000 to $15,000. The national advertiser with a live show cannot compete with this film because of limitation in sets, camera work, lighting, direction and errors. And so, on film, it is possible for the regional or local advertiser to equal or better the national sponsor's effort. In addition, he knows in advance what he is getting in the 13, 26 or 52 weeks of programming that he buys, and knows there will be no embarrassing mistakes, as happen in even the most important live shows."

Among other programs represented by UTP are included "Royal Playhouse," "Sleepy Joe," "Old American Barn Dance," "Fashion Previews" and numerous others. The firm has offices in all principal cities with main headquarters at 444 Madison Avenue, New York City.

MY PATRONS GET

Good Results with Either One

says A. O. Tandrup, Plant Manager, Milk Receiving Station, Pure Milk Association, Richmond, Ill.

...and good results in sanitizing cans, pails, equipment and utensils on the farm mean a steadier supply of lower count, higher quality incoming milk to any dairy plant. Here's what Mr. Tandrup says about both LoBax-21 and Lo-Bax Special—"I sell LoBax-21 and Lo-Bax Special because my patrons use the kind they like best. Some like LoBax-21 with the wetting agent. Some prefer to use time-tested Lo-Bax Special. No matter which one they use, they get good results."

For a steadier supply of high quality milk, stock and use these Lo-Bax Chlorine Bactericides in your plant—recommend them with confidence to your producers. Write today for full information. Mathieson Chemical Corporation, Mathieson Building, Baltimore 3, Maryland.

Mathieson CHEMICALS

9126

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

LOOK, DAD, I'M SELLING

How Jerry Brittain, Age 11, Made a Peacock Out of a Turkey — He Went to the Right People

SEVEN YEAR OLD Jerry Brittain doesn't know a sales contract from an electronic computer—but Jerry does know that to sell 'em you've got to tell 'em—and the 'em have to be the right people.

And thereby hangs a tale to make a sales manager sit up and take notice.

The story starts back in 1946, when Mr. and Mrs. Floyd R. Stamp of Akron, Ohio, developed and patented a novel frozen sucker mold for home use. Made of plasticized rubber, the mold had only to be filled with chocolate or sweetened milk, fruit juices, soft drinks, or beverage powder mixtures and placed in the freezing compartment of a home refrigerator to produce frozen suckers that would pop right out—complete with wooden handles.

Two years of trying to market the mold through stores were two years of fruitless labor. So the Stamps decided to ask P. W. Brittain of The Brittain Products Company, an Akron sales organization, to give them some help.

They gave Brittain exclusive sales rights to their invention, and all of their problems, too. Chiefly, these were: Only mild interest among storekeepers; and a nagging manufacturing cost problem that made a reasonable price for the mold quite impossible.

In two years, progress could be measured with a micrometer. So the Stamps decided they wanted out. They sold their patent, all their master molds and all the headaches to Brittain. He bought them only because he still thought the frozen sucker mold was a comer. And when he had time, he would figure out how to make it pay off.

His figuring resulted, first, in lining up a dependable source of supply that could produce the molds at a substantially lower cost. Armed with a price story that gave retailers a chance to make a profit, Brittain enjoyed some success selling to chain and variety stores.

But it took hours of salesmanship to try to convince a retailer that kids would buy the mold. And more of them remained unconvinced than convinced.

Jerry Brittain poses with his selling tools; an intriguing smile and a frozen sucker. In a nutshell, Jerry's selling success is simply, "If you want to sell you've got to see the people."

While Brittain was beating the bushes with only mediocre success, his seven-year old son, Jerry, was doing a land-office business in the molds right in his own neighborhood. Jerry's method: To walk around with a frozen sucker in his hand until he met a neighbor's child. Then the conversation went something like this:

Child: Where d'ja get the frozen sucker?

Jerry: I made it.

Child: Yeah!—I'll betcha bought it!

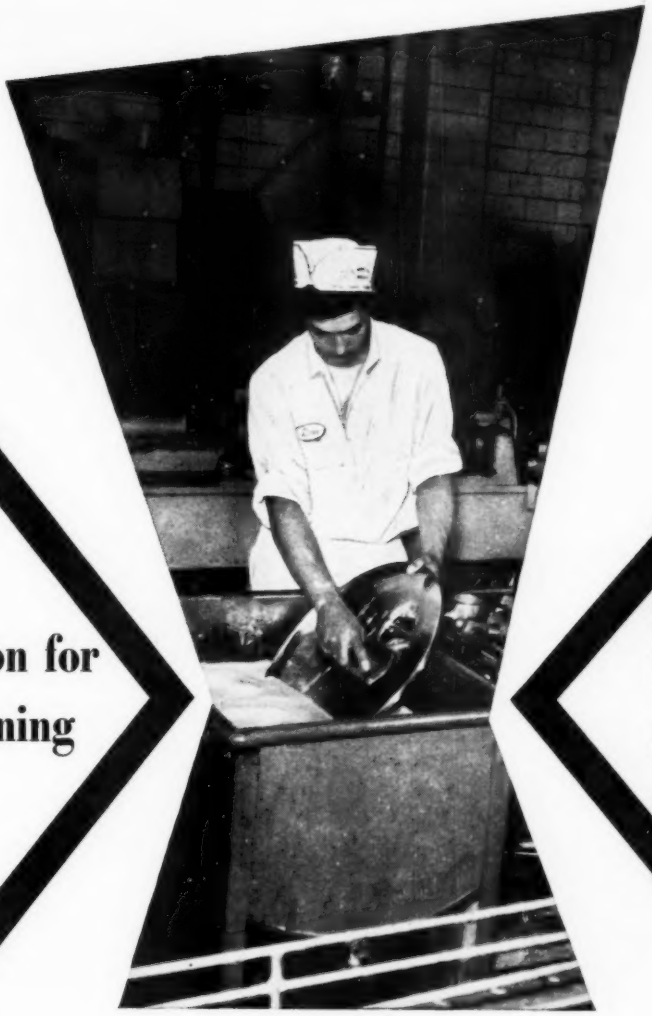
Jerry: Comon' to my house and I'll show you.

The demonstration took less than a minute—and sent the neighbor's child rushing home to badger his mother for 39c "to buy one of Jerry's frozen sucker molds."

Jerry's method was so successful that he often sold more molds in a week than his father, who followed more orthodox sales avenues. But not for long—because Brittain soon realized what Jerry knew instinctively. To sell 'em, you've got to tell 'em—and the "'em" have to be the right people—kids!

However, Brittain couldn't go around with a frozen sucker in his mouth, playing Pied Piper to the world's kids. To achieve the same

(Please turn to Page 78)



The best solution for equipment cleaning

One ounce of Kelvar* plus Six gallons of water

Solve your equipment cleaning problems with a Kelvar* solution. Just one ounce of Kelvar gives you six gallons of complete cleaning action.

By complete we mean that Kelvar gets the job done right the first time. It quickly penetrates soil, holding it in suspension so that it doesn't redeposit. Kelvar rinses quickly, too, and brightens stainless steel—leaving no water spots.

Ask your Wyandotte Representative or Supplier about Kelvar. He'll show you how much complete cleaning there is in one ounce of Kelvar. He'll prove to you that Kelvar can reduce your equipment cleaning costs.

*Reg. U. S. Pat. Off.

P.S. Do you have a cleaning problem? Write Wyandotte for free technical help.

"Cleaning the World"

THE WYANDOTTE LINE—*plant and equipment cleaners:* Kelvar; G.L.X., SR-10, Detergent; *germicides:* Steri-Chlor, Spartec; *can washers:* Kunwash, C.W., Keego, SR-10; *bottle water conditioners:* N.S.Q., Keego; *acidity standardizer:* C.A.S.; *bottle-washing alkalies:* B.W.C., Seneca Flakes, Chippewa Flakes, C.C.S., 721 Special. **In fact, specialized products for every cleaning need.**

Wyandotte KELVAR

Prevents milkstone
Makes suds in hard or soft water
Rinses freely, with no water spotting
Penetrates soil rapidly
Suspends soil to stop redepositing
Is safe on all metals
Is easy on hands

WYANDOTTE CHEMICALS CORPORATION
Wyandotte, Mich. • *Service Representatives in 88 Cities*

Wyandotte
REG. U. S. PAT. OFF.

One of the highlights of Mr. Montague's talk was a graphic demonstration of his thesis that milk is a low cost food. On a barter basis 12 quarts of milk would bring 13 medium priced cigars, or a pint of not very good whiskey, or a pair of low cost baby shoes. What Mr. Montague had to say was important and he said it very well. The full text of his address is published below.

PROGRESS IN THE DAIRY INDUSTRY

Borden President Tells the Nation's Food Editors Some Sensible Things About the Milk Business—Sees Concentrated Milk "Dead as a Dodo"

I ADDRESS YOU tonight as a representative of the undramatic, but very necessary food industry. Our products are, for the most part, staples. Their movement, from farm to table, has come to be regarded as a routine activity, dependable as the rising and setting of the sun, but much less spectacular.

As writers, you serve a nation of readers who are accustomed to industrial marvels and have come to expect a new atomic miracle with each edition of the daily newspaper. Because of this, you are undoubtedly impatient with the food industry. I can hear you asking: "What is the matter with the food people? Don't they ever do anything? Doesn't anything ever happen in the dairy business?

These are reasonable questions. The dairy industry produces few developments that are worthy of front page treatment. Our progress is not made by leaps and bounds or somersaults. I submit, however, that we do move forward – in a quiet way. Ours might be called a subsurface progress: Few of the improvements are newsworthy in themselves, but collectively they represent a substantial advance. In fact, during my 30 years in the business I have witnessed these changes and know that they have brought about a revolution that is decidedly in the consumer's interest.

Some of us occasionally find ourselves sharing your impatience about new developments. I, for one, while fully aware of the long-time improvement, would have my progress at a faster clip and according to a logical plan. But experience has taught me that change comes only as rapidly as men themselves change and are willing to reject the old and accept the new.

Men generate the very ideas which generate change. But men also cherish the prejudices and firmly-held habits which discourage new ventures. Lack of new ideas is not a problem in our Company. The problem is to get people both within and outside the Company – all of the people with whom we deal – to welcome the new and break with old habits and customs. Our wonderful American individualism, which is a spur to progress, is also its check-rein. And I, for one, would not have it different.

Theoretically, a planned economy, such as that of the Russians, can speed progress by eliminating the individual and his decisions. A planning group decides what should be produced and how it should be distributed. The same group might also issue directives instructing consumers to use only officially-designated products as per officially-determined directions. Ultimately, the planning group might outlaw individual choice completely, and the housewife who baked her loaves 90 – and not 60 – minutes would face penalties for defying a group directive.

The alternate to such a dreary existence is the somewhat disorderly – but very human – economy in which we live – and prefer to live in. Progress is slow in such an economy because it involves the decisions of many people. In a company such as our

Two Winning Combinations:

A *winning combination* works for you
when you use "Screen Broadcast" Advertising in your local movie theatres.
Combining all the best features of advertising in newspapers, magazines, billboards, radio and TV, "Screen Broadcast" Advertising makes use of *sight, sound, and action* to dramatize and demonstrate your sales message in *giant billboard size.*

On your local theatre screen, your "Screen Broadcast" reaches your best prospects, the residents of your trading area. You'll be surprised how little it costs. We handle all details of planning, producing and placing. Over 50,000 local advertisers are now using screen advertising. Clip and mail the coupon now for more information.

The SCREEN BROADCAST *Companies*

UNITED FILM SERVICE, INC.
Kansas City — Chicago
Cleveland — San Francisco

MOTION PICTURE ADVERTISING SERVICE CO., INC.
New Orleans — New York

SCREEN BROADCASTS
2449 Charlotte, Kansas City 8, Missouri

I would like to know more about your Screen Broadcast Advertising Campaign.

FIRM _____

ADDRESS _____

CITY, STATE _____

BY _____

XUM

WHEN BOY MEETS CALF

When Holland-born Jack Tiedema retired from dairying, one of the wealthiest citizens of Bozeman, Mont., he decided to dedicate his interest in dairying to helping farm children get a start in a workable and well paying hobby.

He conceived the idea of "Junior Dairymen", farm youth to become cattle raisers and leaders in milk production in the West. The thought was to have local businessmen sponsor a worthy boy or girl and help him or her buy a calf. In return for keeping a calf of good pedigree in fine condition, the youngster was entitled to keep the calf once the heifer bore one, then was obliged to return the original animal to the program. To insure that the youngsters started with good animals the business firms of Bozeman paid in at least two-thirds on the purchases. To prevent loss the animals were insured.

Most of the boys who started in the program did very well indeed. Not only did they get a running start on a good dairy herd, but won numerous prizes with their animals at the Great Falls Fair.

In the beginning only a few business firms were enthusiastic, but as soon as the local Chamber of Commerce backed Tiedema's idea, there was a near scramble for the honor of sponsorship. A local hotel, movie theatre, milling concern, bank, and newspaper all back deserving boys and girls. While raising the calf, the boys and girls are entitled to free help and advice from the Government agricultural agent. The residents of the rich Gallatin Valley, famed for its sweet grass and fat, milk-producing cows, are so pleased with the success of the program, they are sure it will be adopted in many other dairy communities throughout the West.

A splendid boy, a fine purebred calf, and the magnificent Montana countryside say that this Junior Dairy Program is worthwhile. This is Ken Asbury of Bozeman, Montana.

own every major change requires, first of all, agreement by the men in management. Then it requires cooperation of employees who are to carry out the change. Finally – and most important – it must win the acceptance of our customers who have the power of final veto: We serve them what they want, and how they want it; if we don't, they turn to our competitors.

Consumers and businessmen alike may penalize themselves by clinging to old-fashioned products and outmoded practices. But experience should teach us that only by accepting sound innovations can we gain a greater share of the "creature comforts" which are so important in the life of every American.

Our present system of milk deliveries is an example of the benefits derived from a basically sound change, and also of the industry's "subsurface progress." Until the war, Americans were accustomed to daily milk deliveries. People in the industry had long known that daily service was no longer necessary because of modern refrigeration and the better quality of our milk supply. Yet, changing this old custom was a major undertaking that brought complaints from many customers who were slow to grasp the factors involved.

The universal adoption of less frequent deliveries was a boon to the American consumer. If it had not come about, milk would be selling at a much higher price today. This is demonstrated by these figures:

$250,000,000 Saving

A quart of milk sold for 15.4 cents in Chicago just before daily deliveries to homes were abandoned in 1942. The farmer who produced this milk was paid 5.7 cents per quart; today he gets 9.7 cents, an increase of 70%. The routeman who delivered it earned $51.73 a week; he now earns $90.53, an increase of 75%. While the two major costs in a bottle of milk – the farmer's price, and the cost of the labor employed in distributing it, have advanced 70% and 75% respectively, the price to the consumer has advanced only 51.6%. If milk were still delivered on a daily basis, this bottle which now sells for 23½ cents would have to be sold at about 25½ cents.

Is this progress? Apply that 2-cent savings to the annual national consumption of 46¾ billion quarts of milk and you will find that the streamlining of our distribution system cut more than $250 million from the American consumer's milk bill – an immense sum to be spent in any way that the consumer chooses. I am proud of the leadership of our own company in taking this forward step.

This milestone in the industry's progress illustrates an axiom in the fluid milk business: Lower consumer prices can come only from a lower farm price or a reduction in labor costs. Combined, these two cost elements accounts for about 81% of the price of milk and no other single element of cost is, by itself, sufficiently important to affect prices.

You can write off any possibility of lower farm prices because virtually everywhere in the U. S. these are controlled directly or indirectly by the Federal Government, whose policy calls for high—and not low—prices. The consumer's hope must rest in more efficient distribution which in turn involves labor costs. For relief from higher prices, the consumer must therefore look to lower labor costs. This does not mean lower wages. It

does mean, however, that increases in wages must be offset by higher productivity per man to avoid taxing the consumer for each wage increase.

Every-Other-Day Delivery was effective because it struck directly at the heart of the matter. By increasing the amount of milk delivered at each stop, it reduced the cost of serving the average customer. It did not, however, go far enough. Here in Chicago, for instance, we have noted that the wages of deliverymen rose 75% in ten years. The volume delivered per man rose only 22.5%—a fact which accounts in part for the increase in milk prices during this period. What is needed is a further reduction in delivery frequency to limit service to three deliveries a week Unless this progressive move is made generally—as it has been adopted in many cities—consumers will be penalized with higher prices. And there is no sound argument that can be advanced against three-day-delivery.

Watching every cost element is essential in marketing a low-priced, low-profit, highly-competitive item such as milk. Our drive for greater efficiency should not, however, leave the impression that present methods are antiquated or inefficient. For comparison it is interesting to consider the Post Office Department, which operates on a handsome subsidy from the taxpayers. If the Post Office undertook to deliver milk to your doorstep, the cost of delivery alone, under present rates, would be $1.58 per quart. And under the proposed increase in postal rates the cost would be $2.10 per quart.

Both postal and milk deliveries, along with professional, clerical and other service functions, rely heavily on manpower and to only a limited degree on machinery. If costs are not controlled, consumers are certain to perform for themselves certain services for which they once depended on others. It is uneconomic to carry your own letter to San Francisco and impossible to fill your own teeth. But the higher cost of domestic help has encouraged many women to do their own housework, and high delivery costs will encourage more and more consumers to purchase their milk at stores and carry it home themselves.

In contrast to the problem faced in service industries, progress is continuous in the manufacturing and processing end of our business. New conveyors and handling equipment reduce the manpower needs in milk plants. In some newer plants, machines dump milk cans as they come from the farm and automatically take samples from each can for testing. Permanent glass piping now expedites the daily plant clean-up, which is a costly step in plant operation. The short-time, high-temperature pasteurizer is less costly to maintain and operate than older equipment. New aluminum bodies on transport trucks permit heavier payloads. And there is constant experiment on equipment which will reduce the cost of handling bottles in our plants.

Better Product — Lower Price

Here's an example of progress of this kind. This is an early Borden container which was recently sent to us. In the early days of the company this container was either sold or loaned to customers for milk which they purchased loose. In 1858, enough milk to fill this container sold in New York City for 12 cents. Assuming no change except in the buying power of the dollar, this product would sell for 35 cents on today's market. The nearest modern product to this is probably evaporated milk. Today, a consumer pays only 14 cents for a can of Borden's evaporated—a better product, packaged in a single service container which can be stored indefinitely. Why? There is no expensive delivery service. Modern fillers pack 9,600 cans per hour, and labelling and packing machinery keep pace with them. Continuous sterilizers have supplanted the batch sterilization which reqired so much manpower. There is more efficient transportation and no unreasonably high delivery costs.

Up to this point I have discussed progress in manufacturing and marketing. But substantial contributions have come also from the laboratory. One of these is the new Gail Borden Signature Quality Milk which you have sampled here tonight. Someone has said that this new product is the most important milk development since pasteurization. A quart of Gail Borden Milk, fortified by a special concentrate, provides an adult's full daily quota of the principal vitamins and minerals, except Vitamin C. This concentrate, which was developed by a Borden laboratory, is offered also to other milk distributors. Thus Gail Borden Milk, or a comparable product marketed by other milk dealers, is now available in many cities.

Another laboratory development has not been so successful. You have read a great deal about concentrated fresh milk. For a number of years we have worked on this product and our own research has been paralleled in laboratories of our competitors and many of the state universities as well. We can produce a concentrated milk having the same fine flavor of fresh milk.

We have marketed the product experimentally in many Illinois communities and elsewhere. Consumers have not been enthusiastic about it here or in any other area where it has been introduced.

Concentrated milk fails as a consumer product because it flunks a simple test in economics. It can't compete successfully with fresh milk because it can't be sold at a sufficient savings to compensate the housewife for her added trouble in remixing it. It can't be sold at a lower price because it can't effect a reduction in the two principal costs which I mentioned earlier—the cost of the milk bought from the farmer, and the cost of delivering the product to the consumer.

(Please turn to Page 68)

Better Dairies Everywhere Are Switching to
HAYNES SNAP-TITE NEOPRENE GASKETS
for Sanitary Fittings
Order through your favorite jobber.

XUM

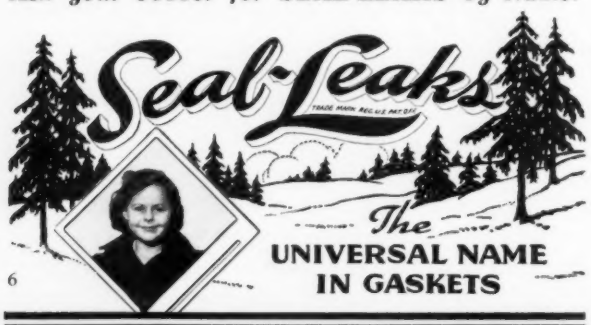
A Ten-to-One Chance

THAT your own best jobber regularly stocks the most-used sizes of *Seal-Leaks* – most good jobbers do. For *Seal-Leaks* are just a bundle of overlooked superlatives.

Resilient, odorless, sanitary Beaverite stock fresh from the piney northern forests. Automatic by-the-millions cut, always a perfect fit. Sanitary neo-style unit packages that keep the unused **Seal-Leaks** always sweet. A universal assortment of sizes. And a nation-wide jobber hookup that's unbeatably handy —

These and other unique advantages explain the **Seal-Leak** habit in so many of the really up-to-the-minute milk plants, the country over.

Ask your Jobber for SEAL-LEAKS by Name.



6

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PROVIDES ACTUAL SEDIMENT TEST OF ENTIRE RUN . . .

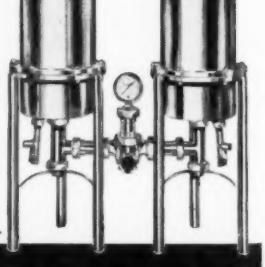
ON FARMS, IN SMALL PLANTS, LARGE PLANTS

MODEL E

SPRINKMAN C. S. PLATE FILTERS

In Sprinkman C. S. Plate Filters, true filter action is afforded by all cotton media in "controlled suspension" between horizontal stainless plates. Flow is upward. Unfiltered milk cannot contact filtered product. Only suspended impurities reach bottom side of pad. Heavier particles settle below pad. Examination of filter media at end of run provides visual evidence of foreign matter removed. For positive filtration, extra large capacity and extended media life, it's the Sprinkman C. S. Plate Filter. SEE YOUR JOBBER.

MODEL D



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4022 N. Port Washington Avenue, Milwaukee 12, Wis.
Branches: Chicago, Los Angeles

CHERRY-BURRELL HEAD DIES

We regret to announce the death of John W. Ladd, President of Cherry-Burrell Corporation, early Monday morning, October 29th. He had been ill but a few days. Mr. Ladd is survived by his wife, a daughter, a sister and three grandchildren. Services will be held in Evanston, Illinois, on Wednesday afternoon. He was 74 years of age.

Mr. Ladd was a great leader in the dairy industry. His vision and inspiring confidence will be sorely missed.

In March, 1951, Mr. Ladd completed 50 years of service to the dairy industry. His first venture was a cheese makers supply business which he organized at Saginaw, Michigan, in 1901. It grew with the development of the dairy industry and the automobile, ultimately embracing a factory and warehouse in Detroit, as well as branches in Cleveland, Columbus and Cincinnati. Mr. Ladd recognized the needs of medium and small milk plants. The result was the development of the Ladd "Blue Line" pasteurizers and bottle case and can washers. He also introduced the now widely recognized Viscolizer homogenizer about 1904.

Mr. Ladd was one of the founders of Cherry-Burrell Corporation in 1928 and became First Vice-President in Charge of Sales. Through the years he consolidated and solidified what is generally considered to be the best group of company owned sales branches and associated distributors in the dairy equipment and supply industry.

In October, 1943, Mr. Ladd succeeded the late Walter Cherry as President and General Manager of the company, a position he held until his death.

Mr. Ladd was a great leader in the equipment and supply business, serving in many associations through the years. He personally enjoyed the part he played as a director of the National Dairy Council. Mr. Ladd was most active in the affairs of the Dairy Industries Supply Association and was president for a two year term in 1944-45. He helped found the Michigan Allied Dairy Association in his own state, and as a young man, was president of their supply men's group. His activities in and contributions to other organizations are too numerous to mention.

●

KEY MEN IN CHICAGO MARKET

Remarkedly rapid strides have been made by the Pure Farms Milk Products organization of Chicago in their work of providing for the distribution and sale of Grade A milk and milk products. Their success has been due largely to two men who are well known in milk circles.

John Duzansky has a wide acquaintance of friends in the milk business, particularly in the middle west. He is president of the Pure Farm Dairy Company of Chicago, and was president of the Associated Milk Dealers of that city for two terms. Being conversant with the needs for supplies which confront every dealer, he has been able to help many with their supply problems. Duzansky is also Trustee for Milk Wagon Drivers' Union and Milk Dealers' Severance Retirement Fund.

Paul F. Krueger was chief sanitary officer of the Chicago Board of Health for many years in charge of

milk inspection. He served for a number of years as a member of the U. S. Public Health Service Milk Advisory Board, and is past president of the International Association of Milk and Food Sanitarians. He is well known by the milk industry because of his close connection with the development of Grade A milk supplies, and has pioneered in the advancement of quality control procedures.

●

MILK SANITATION GOES ON TV

The sanitary protection of milk is being featured by the National Association of Manufacturers on its television national network series "Industry on Parade." These programs are seen by most of the 13,000,000 television sets in the United States through 56 television stations in all major cities from coast to coast.

The manufacturing scenes and the sanitary protection products are those of the Sealright Co. of Fulton, N. Y., Kansas City, Kans., and Los Angeles. The televised scenes were taken at the Fulton plant of Sealright and at several dairies using Sealright's Sealon hooding process.

The National Broadcasting Co. produces the series for NAM.

The program including the milk protection chapter was released to the 56 TV stations on September 25, NBC has advised the trade. Officials said that many of the stations showed it on Saturday or Sunday, September 29 or 30. They advised dairymen to communicate with their TV stations and "ask for the date and time of scheduling Reel 50 of the Industry on Parade series".

The milk sanitation chapter traces the milk protecting caps and hoods from piles of northern spruce through the plastic coating of the paperboard and the manufacture of the closures. It shows the sanitary precautions taken in their manufacture and the application of the hoods in the dairy.

●

SHORT COURSES SERIES AT GEORGIA

More than 500 Georgia dairymen, agricultural leaders, and dairy products manufacturing and marketing experts are expected to attend a series of short courses scheduled at the University of Georgia College of Agriculture during the next few months, according to H. B. Henderson, chairman of the College's dairy division.

A two-day course in market milk, November 14 and 15, will open the series, Henderson stated this week. Milk plant operators, milk plant employees, laboratory personnel and milk and food sanitarians from all over the state are urged to attend.

A course in dairy production is planned for January 23 and 24 with dairy farmers, agricultural workers, and others interested in the production phases of dairying to attend.

The third in the series, an Ice Cream short course, will be held March 19 and 20, 1952, and the program is being planned to appeal to ice cream manufacturers, plant workers, and sales and distribution personnel.

People interested in the manufacture of soft cheeses, such as cottage cheese, cream cheese and similar prod-

Housewives, children, factory and office workers . . . young and old have developed a taste for chocolate drink, served hot or cold. Take advantage of this expanding market with Vara-Made chocolate drink that has the *true chocolate flavor and color* that win and hold more customers.

Made from the finest Dutch process cocoa, Vara chocolate makes a product that is creamier, richer, more delicious. Actual consumer taste tests have proved a preference for Vara-Made chocolate drink.

You get economy too with Vara-Made because it can be mixed at 12 to 1 rather than 10 to 1 as with products using substitute ingredients and synthetic flavors—*that's an 18% bonus in volume.*

Ask your Cherry-Burrell representative to show you the Vara powder or syrup suited to your processing, hot or cold . . . using fresh milk, reconstituted milk powder or condensed. Pasteurizing is safe and even improves the flavor.

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Milk and Food Plant Equipment and Supplies
FACTORIES, WAREHOUSES, BRANCHES, OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 56 CITIES

trendmaker in a great industry

XUM

AT THE TURN OF THE CENTURY

Back in 1901, excitement and joy dominated the Christmas scene in the average American home. 1901 was also the first year in which Forbes customers were extended Christmas greetings. **FOR 50 YEARS**, we have sent similar greetings to our many friends and customers.

Again this year, please accept our sincere wishes for a Merry Christmas, and may the New Year bring peace, prosperity, happiness and good will.

Forbes — **The BENJAMIN P. FORBES CO.**
2000 WEST 14th ST. • CLEVELAND 13, OHIO

TREEN MILK CASES *for paper bottles* **COST LESS** *because they* **MAKE MORE TRIPS**

We specialize in boxes of Cottonwood — the lightest weight hardwood. Reinforced with galvanized strapping and nails. Has stacking bottom. Fine in appearance, strong and durable, the most economical milk case to use.

*Can be furnished with stainless steel strapping and dipped in fungus proof material.

TREEN BOX COMPANY
Tioga and Memphis Sts., Phila., 34, Pa.
"ACES IN CASES" FOR OVER 50 YEARS

ucts will be invited to attend the short course in this field April 11, 1952.

All courses are to be held in the college dairy building on the College of Agriculture campus.

Speakers for the events will come from the major dairying regions in the country and will be among the nation's outstanding leaders in their particular fields.

Dairying experts point out that Georgia's dairying short course programs are probably the most oustanding in the Southeast.

●

NEW MILK PRODUCTION MOVIE

Detroit's growing importance as a motion picture production center with a world-wide market for its films is emphasized by current requests from eight foreign areas for a Detroit-made film.

Latest motion picture production to stimulate overseas interest is the color film, "The Science of Milk Production," made by the Ralston Purina Company with the assistance of The Jim Handy Organization.

A Danish sound track for the film is being produced in Denmark, and prints of the film, with Danish voices recorded on it, will be sent from Detroit to Elias C. Muus, agriculturist of Odense, Denmark, for showings to Danish dairymen.

The film, based on research at the Purina Experimental Farm and Laboratory and the University of Minnesota, is the first in which the camera catches the internal action resulting from the milking of a dairy animal. The picture shows the farmer how milk production can be increased by proper timing of the operation and by seeing to it that cows are not annoyed by sudden changes in handling techniques or by other irritating elements in their environment. The picture was used by physiologists as soon as it was released as evidence that improper milking practices are a great cause of mastitis, and the film is in use as a teaching aid in medical schools. Animated drawings supplement the photography to show the origin of milk in the cow.

The Detroit motion picture is at present being shown in the Union of South Africa, in Western Australia, and in Tasmania. It is also being circulated in Southern Rhodesia through the Office of the High Commissioner and is being shown to dairymen in Belgium, Canada and Ireland.

●

MARKET MILK AND MILK SUPERVISION SHORT COURSE

The Pennsylvania State College has announced a market milk and milk supervision short course January 28 to February 9.

This course is designed primarily to assist the industry in obtaining informed personnel who understand the problems involved in the production, processing, distribution, and supervision of fluid milk and related products.

Subjects covered in lectures, discussions, and laboratory work include: composition and properties of milk, milk bacteriology, quality tests and methods, dairy farm inspection, milk and public health, food value of milk,

lactometer and fat tests, standardizing, pasteurization, thermophiles, thermoduric and colon organisms, separating, clarification, homogenization, cream, chocolate milk, buttermilk, cottage cheese, problems of distribution, milk economics, milk legislation, and milk control commissions.

Considerable laboratory work is included. Students should bring white suits with them as they are required for work in the College Creamery.

A Babcock testers license examination is scheduled at the conclusion of the course for those desiring to qualify as testers. Special discussions will also be held for those interested in the work of Approved Inspectors in Pennsylvania.

Further information and application forms may be obtained by writing to Professor A. L. Beam, Director of Short Courses, The Pennsylvania State College, State College, Pennsylvania.

●

WISCONSIN HITS 15 BILLION

Of about 15,000,000,000 pounds of milk produced in Wisconsin in a recent year, 2,395,000,000 pounds is reported as having been shipped out of the state. This covers fluid milk and cream equivalents but does not include the milk equivalents of butter, dried or evaporated milk. Much of the milk shipped in bulk from Wisconsin goes to northern Illinois, principally Chicago. Other states to which milk is shipped include those as far away as Tennessee and Texas, as well as Pennsylvania and other states south and east of Wisconsin.

There are no figures to show how much milk is still shipped in railroad cars, but it is known that some milk and cream are shipped in cans in refrigerated railroad cars. Ten-gallon cans are used for this purpose, and Philadelphia is reported to have been a customer of such milk for many years. Milk shipped in bulk is loaded into tank trucks, from 4,000 pounds up, the average tank truck holding about 25,000, but some carry as much as 40,000 pounds.

The milk shipped from Wisconsin to other states in bulk is inspected by plant quality men and by plant field men and there is also regular inspection by state agencies, especially of milk coming under General Order No. 125, or interstate Grade A. There is also inspection by some of the personnel of the boards of health of importing cities, such as Chicago, but many cities accept the milk if in accordance with U. S. Public Health Service or guaranteed Grade A. Authorities at the department of agriculture of Wisconsin were uncertain as to whether any of the milk shipped out of the state is homogenized before shipment, but it is thought that the lipase reactions in such milk may be the reason for not shipping homogenized milk a long distance.

There are many shippers of milk in bulk in the state of Wisconsin, including subsidiaries of Bowman and Borden companies, and Wisconsin has many large co-operatives, among the largest being those operating under the names of Turtle Lake Co-operative, Consolidated Badger Co-op of Shawano, Wis., the Lake to Lake Co-operative of Kiel, Wis., and a number of others.

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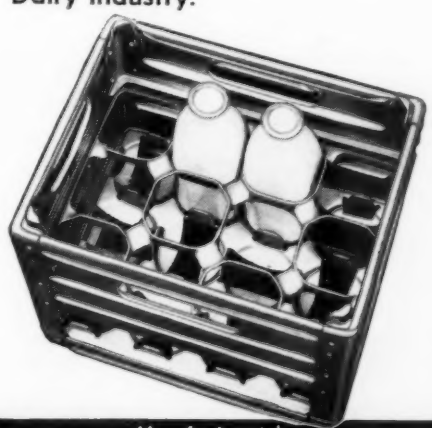
ERICKSON MILK CASES

has produced a case that is unequaled in service, durability and looks on the Dairy Market today. In 1952 we will continue our policy of constant research and endeavor toward the perfection of our product to satisfy every want of the Dairy Industry.



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C. E. ERICKSON CO., INC.
DES MOINES, IOWA
Sold Exclusively by
REYNOLDS METALS COMPANY
LOUISVILLE, KENTUCKY

WHEN MILK COOLING IS DELAYED

By G. M. TROUT, A. L. BORTREE[1], H. M. DALAYA[2], and P. S. MEDORA[3]
Departments of Dairy and Bacteriology and Public Health

FRESH RAW MILK seems to have a temporary inhibitory action on the growth of bacteria. Judged by the number of colonies that grow on agar, bacteria in freshly drawn milk remain inactive for a time. Even at favorable growth temperatures, they sometimes actually decrease in numbers. Then, after an apparently dormant period they begin to multiply rapidly, unless inhibited by adequate cooling. This seemingly phenomenal property of milk has long been known as the "germicidal action of milk." It may be due in part to the normal "lag phase," characteristic of bacterial growth in a new environment.

Research workers have made exhaustive studies on this phenomenon and have written much about its limitations and possibilities. Space here does not permit a thorough, comprehensive review of the literature on the subject. However, the excellent work and reviews on the "germicidal action of milk" by Hunziker (1901), Rosenau and McCoy (1909), Heineman (1921), Frayer (1932), Rogers (1945) and Hammer (1948) make possible a summary showing that the "germicidal action" of cow's milk

a) is apparent rather than real, the reduction in plate count of bacteria being due to clumping and to temporary dormancy rather than to actual dying off of the bacteria;

b) results from the influence of several factors such as the presence of antibodies, the phagocytic action of leucocytes, unsuitable environment, and the presence of lecithin thought to have a restraining action on bacteria;

c) is specific, restraining certain organisms such as scarlet fever, typhoid, *Staphylococcus pyogenes aureus*, but not paratyphoid A and B and that various heat treatments make its action even more specific;

d) varies with different animals, between milkings and even among quarters of the same animal;

e) is entirely lost within a short time when the milk is kept warm (98.6° F.), lasts from 3 to 6 hours at 70° F., and is less pronounced, but of longer duration, at low temperature (40° F).;

f) is destroyed by pasteurization and boiling, but is not affected by freezing itself, unless the time factor is involved; and

g) is too feeble and variable at most to be of any practical value.

Despite the feeble, variable character of the slowing-up action of bacterial growth in fresh milk, it always operates in behalf of the milk producer, making possible some leniency in the time and rate of cooling milk. Perhaps a few dairymen take advantage of this phenomenon in delayed cooling, in slow cooling and/or in non-cooling of morning's milk where delivery of such milk is permitted. However, it would seem preferable to preserve the "germicidal action" of milk, if possible, by prompt, adequate cooling of the milk, rather than allowing it to dissipate itself needlessly through indifferent cooling procedures. By thus retaining the full bacterial-growth-retarding action of milk this bacteria-inhibiting power would be available to restrain bacterial growth in case the milk warmed up in transit or dumping was delayed at the receiving platform. Thus, the "germicidal action" of milk would be a tool which might serve the milk producer, if need be, after the milk had left the farm.

Studies on this phase of the delaying action of bacterial growth in milk are limited. Work along this line might reveal in part the reason why milks warmed in transit to the receiving station often vary so widely in

[1]Department of Animal Husbandry, Pennsylvania State College, State College, Pa. A former Assistant Professor, Department of Bacteriology and Public Health, Michigan State College.
[2]A former graduate student, Michigan State College. Now in Bombay, India.
[3]A former graduate student, Michigan State College. Now in Ahmedabad, India.

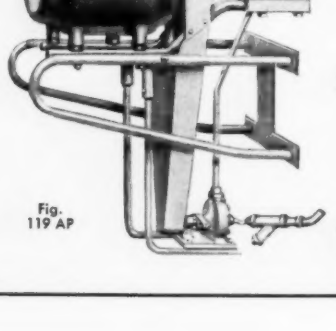
Fig. 119 AP

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- Cleans perfectly
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- Easy maintenance. Minimum care
- Saves time
- Trouble free operation

The SCHLUETER CO., JANESVILLE, WIS.

Designers and Manufacturers of Washing and Sterilizing Equipment for the Dairy Industry

Keeping truck tire wear at a minimum should be a constant goal with every dairy products manufacturing plant. One of the most prevalent wastes of tires is on dual-wheel trucks where the dual tires become unmatched and one must carry double the load originally planned for it.

Matching can be done very easily with this handy tool anyone can make from scrap material. Each time a check-up is made on tires or on the truck, dual-wheels should be checked to make sure they are matching with this simple tool.

It consists of two strips of 2x2 board made to form an L shape with a metal cross brace at the joining part. One side is held flat against the outer tire side as shown in the accompanying illustration while the other side rests atop the tires. In this position one can see immediately if one of the dual tires is worn well below that of the other and tire changes can be made so as to put matched tires on all such dual wheels.

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bacteriological and organoleptical quality. Such data might give credence also to the postulation that the often observed differences in quality of the same-temperature milk at the receiving platform are due to the stage of preservation of the bacterial-retarding action of milk, weak as it may be. To this end the studies reported herein were made.

Experimental

Milk samples obtained by milking machine were poured into erlenmeyer flasks, placed in a thermos jug and taken directly to the laboratory. Portions of each sample were incubated at various temperatures and storage periods as the experiment dictated. Plate counts were made according to standard procedure. About 20 minutes elapsed between the time of milking and that of the first plating. The time of the first plating was recorded as the zero hour.

Influence of Temperature of Initial Cooling Upon Bacterial Growth When the Milk Was Warmed Later to a Favorable Growth Temperature—Milk cooled promptly to 40° F. and stored at that temperature for 10 hours retained in large part its bacterial retarding action, whereas this property was virtually gone in that milk cooled to and

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WEIGH CAN AND RECEIVING TANK

Designed to simplify and speed up milk handling and weighing. Custom built in a variety of capacities. Also available in "double" models for receiving and weighing milk and cream. Finest of stainless steel construction.

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PASTEURIZER

Dry steam heating assures uniform heat transfer and flavor protection to milk or cream. Flooded cooling quickly reduces temperature. Deluxe or standard models from 20 to 500 gallons capacity. Built for long years of trouble - free service. Write for details.

Complete Equipment For Modern Milk Plants

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Manufacturing Engineers for the Dairy Industries
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stored at 60° F. (Table 1). There was no evidence of a continued lag phase in bacterial growth in that milk held at 80° F. At the end of the first 2-hour period following tempering of the milk to 70° F., the increase in bacteria count was approximately one, five and one-hundred and twenty-thousand fold in the samples which had been cooled and stored previously at 40°, 60° and 80° F., respectively. The marked geometric increase in bacteria count was just becoming evident after 4 hours at 70° F. in that milk which had been cooled promptly and held at 40° F.

TABLE 1

Growth of bacteria in milk tempered to 70°F. when the milk had not been cooled promptly after mixing and had been stored at various temperatures (four trials)

Time (hours)	Bacteria count of milk which was held at 70°F. after previous cooling and 10-hour storage at 40°F.	60°F.	80°F.
After milking	Cooled promptly and stored		
0	31,000	31,000	31,000
10	30,000	150,000	180,000,000
After tempering	Tempered to and held at 70°F.		
2	36,000	160,000	3,600,000,000
4	77,000	2,500,000	?
8	600,000	45,000,000	Milk curdled
22	120,000,000	510,000,000	Milk curdled
34	Milk curdled	Milk curdled	Milk curdled

Influence of a Delay in Cooling Milk Upon Later Bacterial Growth—The effect of delayed cooling of milk on bacterial growth is shown in Tables 2 and 3. Evidence of the harmful effect of non-cooling in dissipating the bacterial-growth-inhibitory action of milk was not noted at the end of the 2-hour delay in cooling, but was to be seen soon afterwards when the milk was cooled to and stored at various temperatures (Table 2).

TABLE 2

Growth of bacteria in milk not cooled for 2 hours after milking (five trials)

Time after milking (hours)	Bacterial count of milk not cooled for 2 hours after milking but then cooled and stored at 40°F.	60°F.	80°F.
	Not cooled for 2 hours		
0	2,000	2,000	2,000
2	1,800	1,900	1,700
	Cooled and stored		
4	1,300	3,700	13,600
8	1,800	47,000	150,000
18	29,000	58,000	59,000,000
24	?	280,000	260,000,000
48	22,000	31,000,000	1,800,000,000
72	23,000	180,000,000	18,000,000,000
96	48,000	270,000,000	Milk curdled
120	65,000	1,100,000,000	Milk curdled

TABLE 3

Growth of bacteria in milk tempered to 70°F. when the milk had not been cooled promptly after milking but was finally cooled and stored at various temperatures (two trials)

Time (hours)	Bacteria count of milk which was held at 70°F. after a 2-hour delay in cooling and after a 10-hour storage at 40°F.	60°F.	80°F.
After milking	Cooling delayed 2 hours, then cooled and stored		
0	44,000	44,000	44,000
10	30,000	25,000	1,800,000
After tempering to 70°F.	Tempered to and held at 70°F.		
2	24,000	250,000	8,100,000
4	42,000	220,000	17,000,000
8	4,300,000	7,900,000	71,000,000
12	71,000,000	28,000,000	178,000,000
24	Milk curdled	Milk curdled	Milk curdled

When the delay-cooled, stored milk was tempered to 70° F., bacterial growth was restrained for 4 hours

G&H Sanitary Pumps

- Equipped with NEMA Standard Sanitary Motors
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- Always Gentle, Non-Pulsating Milk Delivery
- Adjustable Stainless Steel Legs
- Made From Stainless Steel or Nickel Alloy With Non-Ferrous Brackets.

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Evaporated milk. Growing demand assures top prices for evaporated milk produced with Rogers Double or Triple Effect Evaporators.

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in that milk cooled to and stored at 40° F. but not in those milks cooled to and stored at 60° and 80° F. (Table 3).

Discussion and Summary

The so-called "germicidal action" of fresh milk would seem to be of value only to those milk producers who follow good milk production practices in cooling the milk adequately and promptly after milking. This property of milk cannot be relied upon otherwise. Such cooled milk will maintain a low bacteria count for an extended storage. Furthermore, the preserved and thus prolonged "germicidal action" will restrain bacterial growth a reasonable length of time should the milk be warmed in transit.

When proper, adequate, electrical farm milk cooling is practiced the "germicidal property" of milk would seem to be of material aid in maintaining the good bacteriological and organoleptical quality of the milk. Often in this system of milk cooling 2 hours elapse before the temperature of the milk is within safe limits so far as bacterial growth is concerned. In general, electric farm milk cooling merely involves setting filled, covered cans of freshly drawn milk into ice water, which extends up to the neck of the can. Here the milk is allowed to remain unstirred until the cans are removed by the hauler. An alternative method of mechanical refrigeration of milk incorporates spraying of the cans with ice water. Studies made by Anderson and Nicholas (1943) show that the temperature of milk was reduced below 60° F. within 2 hours when a 10-gallon can was set in water without agitation, either of the water or of the milk, but with a large amount of initially available refrigeration, with a heavy ice bank and with a water-to-milk ratio of 6:1. During this 2-hour cooling period bacterial growth was restrained and yet the bacterial delaying action of the milk was retained sufficiently to be of value, if need be, at a later period.

These trials support previous findings showing that the bacterial-growth-inhibiting property of fresh milk is soon dissipated unless the milk is promptly and adequately cooled; and that, when this property is preserved by adequate cooling, it may be of value in retarding bacterial growth should the milk be warmed subsequently to favorable growth temperatures. Thus, it is believed that the promptness and adequacy of cooling milk accounts in large part for the differences often noted in the bacteriological and organoleptical quality of the same-temperature, warmed-in-transit milk at the receiving platform.

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1901-1951

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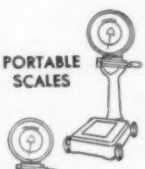
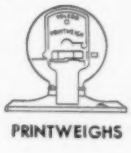


PORTABLE SCALES

BENCH SCALES



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HEADQUARTERS FOR SCALES

NDC Annual Winter Conference Packed With Action Ideas

AUTHORITIES on business prospects and leader attitudes toward dairy foods will be key speakers at the Annual Meeting-Winter Conference of the National Dairy Council, January 28-30, at the Hotel Syracuse, Syracuse, N. Y. Coming early in the new year, this three-day event is being planned with a view to analyzing both the outlook for the dairy industry and some of the industry's problems in the year ahead.

Among the principal speakers will be Walter Garver, Director of the Agricultural Department, Chamber of Commerce of the United States, and Hugh L. Rusch, Vice-President of Opinion Research Corporation, Princeton, N. J. Mr. Garver will speak on "What's Ahead for Dairying in 1952" at the annual meeting luncheon on Tuesday, January 29. Mr. Rusch will address the opening session of the annual meeting on Tuesday. His topic will be "Attitudes Make Sense and Sales."

In announcing these and other highlights of the program, Milton Hult, President of the National Dairy Council, and R. L. Hicks, President of the Board of Directors, Dairy Council of Syracuse, co-chairmen in charge of planning the Annual Meeting-Winter Conference, emphasized that the program is geared to help dairy leaders in developing their action programs for 1951. The program theme is "Dairy Foods Essential to Our Nation's Strength."

The spotlight will also be focused on the subject of cholesterol in the diet, a problem made momentous by magazine and newspaper writings which have loosely interpreted scientific findings and brought unfavorable publicity to foods of animal origin. Outstanding nutrition authorities will discuss this topic on a panel on Wednesday, January 29. They will also discuss other problems of the dairy industry, including the place of fat in the diet and dental caries.

The Wednesday program also includes discussions on nutrition research in sales promotion and progress through nutrition research.

Monday, January 28, the first day of the three-day sessions, will be devoted entirely to problems concerning Dairy Council operations and programming New NDC materials—tools for increasing the use of dairy foods and doing a better job for the dairy industry—will be introduced, and new ways for using some of the older NDC materials will be presented. There will be sessions for management study groups at which office layout and equipment, program interpretation, and personnel relations will be discussed.

Those in the dairy industry who wish to become more familiar with the work of NDC and its affiliated units will find the Monday sessions helpful.

The annual banquet will be held at 7 p.m., Tuesday, with all entertainment being furnished through the courtesy of the Dairy Council of Syracuse, the host unit.

The 1951 Board of Directors of NDC will meet Monday evening. The 1952 Board of Directors will be elected at the annual membership meeting on the following day.

●

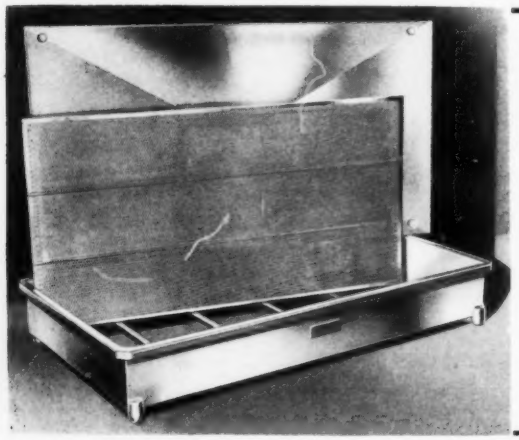
PROGRESS IN DAIRY

(Continued from Page 59)

Consequently, it is not a sound consumer product. And it is as dead as the dodo.

As a result of our experience—and Borden's is a pioneer in milk concentration in its many forms—most of us at Borden's did not believe concentrated milk would be a big seller. Instead of removing only two-thirds of the water, we asked, why not take out all of it, as we have done in Klim and Starlac? In the case of Klim, cost savings are somewhat offset by a high packaging cost necessary to protect the butterfat. But Starlac provides the most important vitamins and minerals of milk and is also their cheapest source. And its enthusiastic reception by consumers and nutritionists testifies to its economic soundness.

The net result of American industrial progress has been low prices for consumers. Improvements similar to our own have been made throughout



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Speeds Draining ● Preserves Firm Curd ● Assures Uniformity ● Simplifies Handling and Storage

Newest development in cottage cheese manufacture . . . prevents matted curd drains quickly, preserves texture and freshness. Trays are self-stacking for easy trucking into cooler until cheese is ready for packaging. The perfect method for draining and holding. All-welded stainless steel construction. Heavy durable screen. Size overall, 24" x 48" x 8". Complete 3-piece unit assembly. Easy to handle, easy to clean. Order any number of trays to meet your production requirements. Add more trays as needed. Ask for illustrated literature.

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Dairy Equipment Division

STEEL and TUBE PRODUCTS CO.

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the food industry, and have made the American dinner table a real bargain counter. Dairy foods are particularly low-priced. I emphasize "low-priced" because the very suggestion that milk is cheap may raise a skeptical eyebrow or bring an incredulous smile. Yet I maintain that milk, as well as other dairy products, is a low-priced item in the diet.

When you talk of anything being low or high there must be some benchmark, some point of reference against which a comparison can be made. When we talk of price we should not talk in terms of dollars and cents alone because we know that last year's dollar is not the same as this year's. Consequently, we should describe value in terms of how a dollar is earned and what a dollar can buy.

Today, the average factory worker earns a quart of milk in less than 9 minutes.

Is that much or little? High or low? Here we turn to our benchmarks, our points of reference. We compare this figure with that of some other place or some other time, or the labor required for some other item the worker wants to buy.

To illustrate: For a comparison in place we may pick Great Britain. There the average worker labors 15 minutes or 75% longer for his quart of milk.

IS THAT WHAT THEY MEAN BY "COMPLETE SERVICE"

If we make a comparison in time, we can turn to the father and the grandfather of the American worker. Assuming Father was working at the same job 25 years ago, he worked nearly 15 minutes or 72% more for the same bottle of milk. And Grandfather, two generations back, labored about 24 minutes, or 173% longer for the same product.

Supposing our comparison is with other foods. Our home economists tell me that the recommended amounts of milk, as set forth in the U. S. Department of Agriculture Market Basket, will provide about 40% of the family's nutriments. Most important even than that, the price of these 40% nutriments comes to less than 23% of the cost of the entire basket of recommended foods!

We Americans are blind to our unique good fortune. We accept as common-place the marvel of an ever-dwindling farm population feeding an ever-increasing city population. The efficient movement of vast tonnages of food from farms to distant tables, made possible by efficient processing and distributing agencies, carries no excitement for us.

We are so confused by price, by dollars and cents, that we have lost our sense of values. To regain perspective, just imagine America returning to the barter system for a brief time each year. There might be a National Barter Week, barring the use of currency during this period and

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Model 4084
King Zeero
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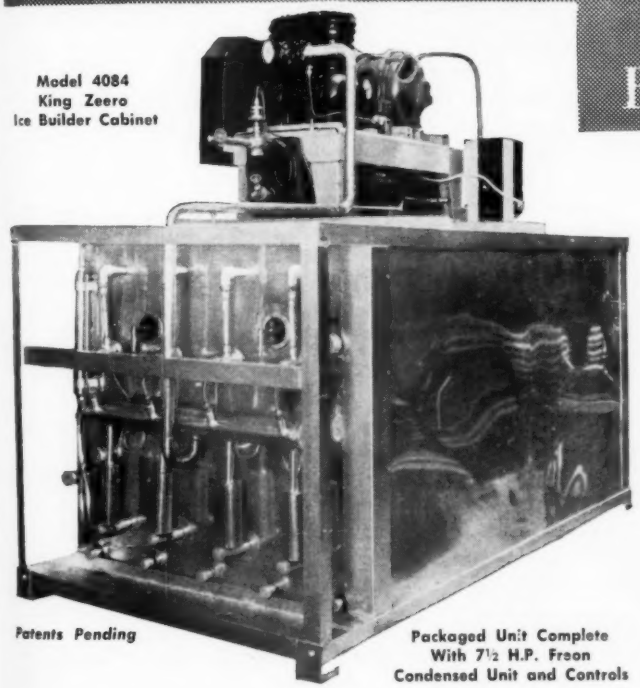

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Packaged Unit Complete
With 7½ H.P. Freon
Condensed Unit and Controls

18,000 pounds of milk can be cooled quickly with a 7½ H.P. Compressor by building up 5,000 pounds of ice in 12 hours in a "KING ZEERO" Ice Builder Cabinet. Other comparable sizes available for your particular needs.

You get additional ice making capacity and efficiency in a "KING ZEERO" unit, made possible by the permanently fixed louvre system in all the water passages welded to the coils and tank. Up to 20% of floor space is saved over the old style holdover systems. Uses Ammonia, Methyl Chloride or Freon as refrigerant.

Write for Bulletins Nos. 74-E and 95.

THE KING ZEERO COMPANY
1147-55 Montrose Ave. — Chicago 13, Illinois

trading in terms of merchandise. Such a week would be cumbersome but would clinch our sense of values.

Thus the woman who wanted to barter might pay no cash but the quarts of milk representing the current money value of a given item. For the sake of simplicity, let us assume that the housewife had one case of milk—12 quarts—with which to barter. She would find that for 12 quarts she could get one toothbrush and three tubes of toothpaste . . . or a very small bottle of inexpensive perfume. Or she might want to get something for her husband—a case of milk would buy 13 medium priced cigars . . . or three golf balls. If she were entertaining for the evening, the 12 quarts of milk would bring only six roses—and short-stemmed ones, at that—or a pint of whisky — not too "good" a whisky, but merely "good for the price." Among other bargains she might find for her 12 quarts of milk would be a pair of low-cost baby shoes . . . two pairs of stockings . . . or a home permanent wave kit. Who would get the best value in these trades?

Which would be the wisest choice?

Making the wise choice is the most persistent challenge of our daily life. The consumer, confronted with thousands of products competing for her favor, has a difficult time. We recognize her freedom of choice, and we make milk nutriments available in many forms, offering a product for every purse and preference.

And from my daily newspaper reading and the occasional clippings that come my way, I gather that you food editors are probably the most important single factor in helping the American housewife make her choices, her daily decisions about household affairs. I have been particularly impressed by the trend in your pages toward the economic phases of food production and distribution. From the elementary matters which directly concern the operation of the household, it is but a step to the general economic problems that are troubling the country today. And the solution of many of these problems rests with housewives as well as the men in government.

Take the problem of inflation. Everyone knows in a general way what makes for inflation. It is money increasing in the hands of the consumers faster than the production of the goods they want to buy. We know also that it is an economic affliction that is visited upon countries at war or preparing to defend themselves against war. We know that inflation feels good at the start—that there's prosperity and easy money. One group in the economy gets a temporary advantage, then other groups rush to overtake it and get ahead. Soon all groups are racing on a treadmill.

The economists are pretty well agreed on what should be done to stem inflation. There should be an end to prodigal Government spending. The Government should stop its bank borrowings because by forcing its paper on the commercial banks and expanding credit it gives added strength to inflation. And while the Government should adopt a pay-as-you-go tax policy, this balancing of income and outgo would be better accomplished through reduced spending than by increased taxing.

The fiscal and monetary policies of the Government are the direct cause of inflation. They are the seat of the disease. Prices and the other objects of so-called economic controls are symptoms—and the controls can't restore health to the country any more than aspirin cures an infected appendix.

There have been realistic approaches to the problem of inflation in the newspapers. The financial and economic columnists have covered the situation in detail. But only rarely is the situation translated into terms of action for the average reader, particularly for the woman who, both as a buyer and a voter, can bring her influence to bear on inflation. Are we neglecting women's tremendous potential, working as individual voters or in organized groups, to impose upon the Government the good housekeeping practices of their own homes?

Some years ago, a lady of your craft wrote a book, "IF I HAVE FOUR APPLES." In it she told of the pathetic efforts of one hopelessly inefficient family to manage its household affairs. I remember the book chiefly for the cynical remark of one character, a newspaper editor.

"Our school system," he said, "turns out people who can't add. And the last thing on earth they want to know is applied economics. Can you teach that two and two make four to people who are firmly resolved that it makes eight?"

I think that we have made progress since the publication of "IF I HAVE FOUR APPLES." Certainly your pages are responsible for an improved efficiency in home management. Some day you may be able to broaden your lessons to cover national affairs as well. I hope that you do. For if we Americans flunk our elementary arithmetic, this country of ours will have a sorry future indeed. I think you people are in a position to do something about this type of education.

Now is the time to plan your Cottage Cheese campaign. G. P. Gundlach & Co. have the ideas and merchandising plans for a successful, profit-making Cottage Cheese campaign.

Write us about formulae, posters, truck cards, bottle hangers, premiums, dehydrated vegetable ingredients.

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LET'S TALK ACCOUNTING

(Continued from Page 10)

ingly higher prices. He must periodically set aside sufficient funds to not only offset his depreciation, but to provide for replacement at probably higher prices. Too many dealers look upon depreciation accounting as "only a book entry", which it is, and are inclined to treat it somewhat cavalierly on that account, so long as no immediate cash outlay is necessary. I don't know who first thought up that expression "only a book entry" but he should be tarred and feathered. Every book entry ever made represents an increase, a decrease, or a transfer of value. The entry for depreciation transfers some of the *asset* value to *expense*. This means, simply, *expanding*. Not cash, perhaps, but an asset perhaps more valuable than cash. And what's being expended by a depreciation entry is not past or present funds, but future funds, which can be very troublesome when the time comes to dig them up.

This book entry is so important that many ways have been devised to handle it. I mentioned that reasonable care and maintenance are presupposed in setting up depreciation estimates. When the nature of the asset is such that frequent and costly repairs may reasonably be expected, the estimate for depreciation may well include an estimate of maintenance costs, such as:

Cost of asset	$5,000
Estimated repairs and maintenance	2,000
	7,000
Estimated trade-in or scrap value	500
Amount to be depreciated	6,500
Estimated useful life	5 years
Estimated annual depreciation	1,300

In a case as this, the repairs by their very nature are such as to prolong the life of the asset.

The illustrations used herein describe the straight line method of depreciation write off, that is, a fixed amount each year. This method is the most widely used, mainly because of its relative simplicity. In the fluid milk industry, its use is preferred over some of the other methods because of the usual, steady, day in and day out operations in that industry. As operations do remain fairly constant in fluid milk, actual physical depreciation does take place more or less uniformly with the passage of time, and the straight line method serves quite well. Just to mention two other common methods in passing—there are the unit of production method and the constant percentage of a diminishing base method. The unit of production method measures wear and tear on equipment by usage, rather than by mere passage of time. It is more accurate than the straight line method when actual usage is not constant. The fixed percentage method assumes that the greatest amount of depreciation takes place in the early years, the amount constantly diminishing as the equipment ages.

Depreciation rates and calculations are very closely watched by the Bureau of Internal Revenue. The Bureau recognizes depreciation as a true business expense and allows it as a deduction. However, the rates are closely scrutinized to make sure they are not excessive. No special accounting method is prescribed as long as it's reasonable and fits the facts. One pitfall is the "allowed or allowable" rule. This rule means only current year's depreciation may be claimed in the current year. If you claimed too little last year, you can't make up for it in some ensuing year.

. . . to make your cleaning a faster, less expensive operation

Your floor cleaning problem is Holcomb's problem. When Holcomb cleaning engineers encounter unusual difficulties, the Holcomb research laboratory lends a hand. Actual samples of dirt from your floors are analyzed. The composition of the floors is carefully checked. Only after a thorough investigation does the Holcomb laboratory make its recommendations.

Ninety-five cents of every cleaning dollar goes to labor costs. So naturally your cleaning can be expensive if not done quickly, efficiently and with the *correct* products.

For more than fifty years Holcomb has specialized in time-saving chemicals and tools—cleaners, waxes, polishes, detergents, disinfectants and hundreds of different type brushes—all the equipment necessary for *any* cleaning job.

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Scientific cleaning materials

On October 30, 1951, Preston Richards, Director of the Dairy Branch of the Production and Marketing Administration of the USDA delivered a significant address before the Annual Meeting of the Pure Milk Producers Cooperative at Fond du Lac, Wisconsin. The full text of Mr. Richard's talk is printed below.

PRESTON RICHARDS

The Dairy Situation in 1951 and 1952

THIS YEAR, next year, and perhaps for some time to come developments in the international situation are and will be having the most profound influence upon American agriculture and upon our entire economic life. The mobilization program, which has been under way since the outbreak of hostilities in Korea in June 1950, has had important direct and indirect effects upon the dairy industry. It seems hardly necessary to review these effects, but I think it must be clear that the shifting of a substantial part of our productive resources and our manpower to military activities and military production cannot be accomplished without repercussions on our whole economy. In the fields of dairy production and processing, shortages of labor have developed in many areas. In limited instances farmers and processors have been hampered or inconvenienced by shortages of materials—chiefly of articles made from metals. And in nearly all areas the costs of labor and the other cash costs in dairy production have increased.

Despite all the difficulties and uncertainties growing out of the international situation, conditions have improved moderately for dairy farmers this year. Prices of milk and other dairy products have been higher than in 1950. Milk production for the entire country has been only slightly less than last year. And, stable production and higher prices necessarily mean that the incomes of dairy farmers have increased.

Here in Wisconsin and, in fact, in most of the northern half of the United States, pasture conditions have been the best in about 50 years. This has been important in the maintenance of a high level of milk production. Hay production in 1951 for the country as a whole has set a new high record. While the hay supply in the South is short, farmers in most other areas have abundant supplies of forage for winter feeding.

Large crops of corn and other feed grains have been produced again this

One of the outstanding developments in the merchandising of milk during the post war period has been the rise of the vending machine. On a recent trip to North Carolina we were amazed at the number of milk companies that were using this device to increase sales. We are pleased to announce, therefore, that there will appear in the January issue of the *American Milk Review* another authoritative article on vending machines by Arthur Yohalem.

Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL SILVER and BRONZE.
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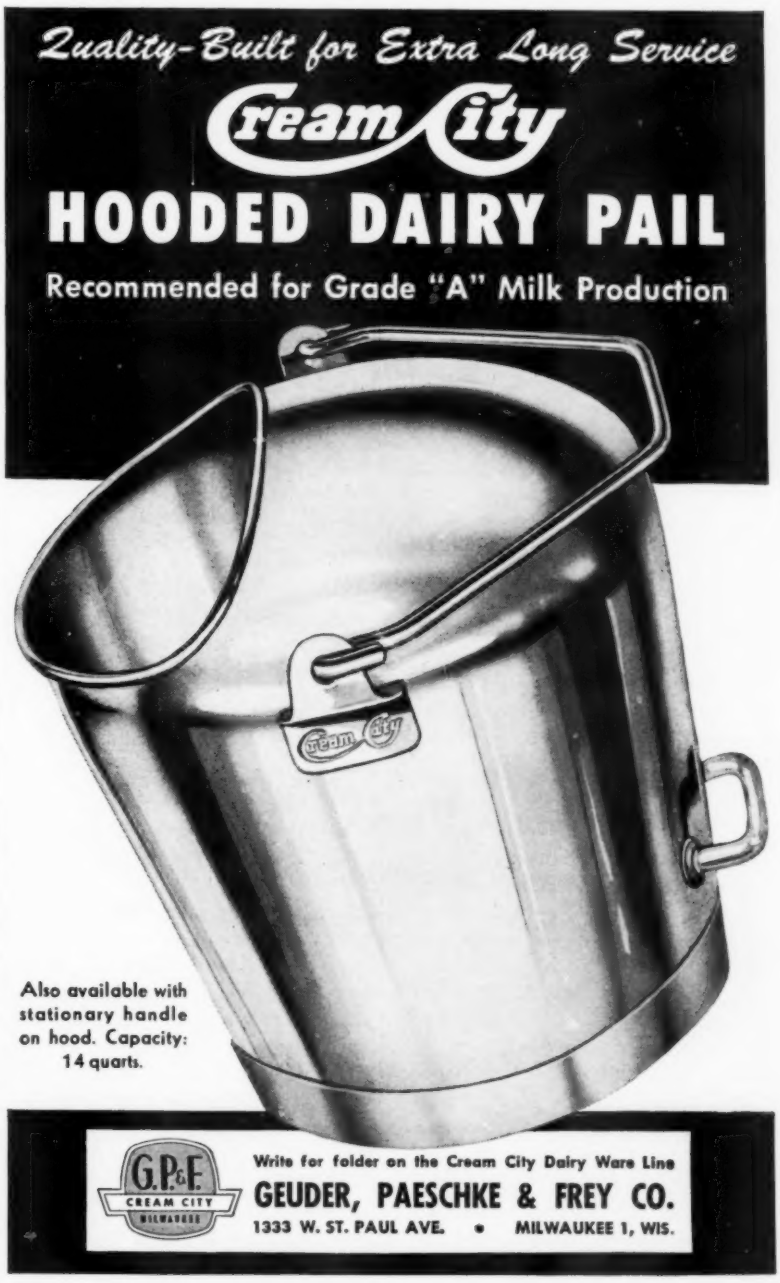
year, and record supplies of oilseed cake and meal will be available for the 1951-52 feeding season. The supply of feed grains, however, is not quite as large as a year ago. At the beginning of the 1950-51 feeding season—that is in the fall of 1950—near record stocks of feed grains were carried over from the previous year. These stocks, along with the quantities produced in 1950, made a large total available feed supply. But our total numbers of livestock and poultry are also large and have been increasing. The amount of feed used in the 1950-51 season exceeded the amount produced in 1950. As a result, stocks of feed grains at the beginning of 1951-52 season are somewhat smaller than a year ago. Feed requirements for the increased numbers of livestock and poultry in 1951-52 will be larger than last year. Even if we have good crops again next year, our carry-over reserves of feed grains will be substantially reduced by the end of the 1951-52 season.

The importance of feed grains and feed concentrates to dairy farmers in this area and in other dairy regions is well known. The existing supply situation for feed grains is not one of alarm, but it does mean that prices of feed grains likely will be higher in the coming months than last winter. And, I think it also means that farmers of the Nation must redouble their efforts to produce larger crops of feed grains in 1952. This increased production is vital to the maintenance of the high level output of milk, meat, and poultry products which is essential for the country's welfare, especially in times of emergency such as we now face.

Continuation of a high level of milk production, which in 1951 will be about 120 billion pounds, will be a difficult task for dairy producers. Under existing conditions, greater use of forage hay and pasture as a source of feed will be necessary. Many dairy farmers can take further steps to produce more of their own feeds. They can do this by stepping up the pasture improvement program by controlling weeds and by other means; they can grow more legumes; they can adopt other proven practices that the Extension Service has been recommending over the years to increase both the quantity and quality of roughage feeds. Efficient methods and practices of feeding and production which have been of proven worth should be more widely adopted to the advantage of dairy producers.

The improvement in the dairy situation during the past year—higher prices and the liquidation of large Government holdings of butter, cheese, and nonfat dry milk solids—has been brought about chiefly by an increase in consumer demand for dairy products. Incomes of consumers generally have reached new high levels. Also, more dairy products have been required for our armed forces. While some improvement has occurred in the demand for all dairy products, the improvement has been the most pronounced for fluid milk, ice cream, and dry milks. Consumers the country over have been buying more fluid milk and ice cream than they did last year and have been paying higher prices for the increased quantities purchased. Another encouraging development is the increased use of nonfat dry milk solids.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Let's Be Practical At Christmas

By BILL FLEMING

Most small-town dairymen are faced annually with the problem of ordering some sort of Christmas advertising novelty for their customers. It used to be quite a problem for the Fleming Dairy at Albert City. For years, the manager, William E. Fleming, passed out an endless line of calendars, advertising pencils and like trinkets of one sort of another.

Finally one year, when it was time for the annual decision, Mrs. Fleming had an idea. The usual run of calendars and other odds and ends weren't particularly attractive. They might lay around for a couple of weeks, but they'd end up in the fire, eventually. Why not be a little more practical? Since women bought the milk, why not something they'd really use? In fact, the Flemings went one step further and decided to leave the advertising message out entirely. Then they went shopping.

That first Christmas, the customers on the Fleming Dairy routes received small glass baking dishes. The enthusiastic response was almost unbelievable when compared to what had happened with the novelties. The Flemings followed up the idea in succeeding years with other dishes, plastic measuring cups and other small items.

The idea has caught on. Owner Fleming says, "I could do a concentrated advertising job all year long, but it wouldn't have half the effect those things do." The cost actually isn't much higher, but those little kitchen tools that the customers can really use have been worth their weight in gold for keeping customers happy and adding new business.

With most of our industries fully occupied either in the production of war materials or civilian goods, it is expected that consumer incomes will continue at high levels and that the demand for dairy products may be better in 1952 than in 1951. And, it is also expected that the strength in demand will be greatest for fluid milk, ice cream, and dry milks. Present high levels of demand for cheese also are expected to continue.

The increases in demand for these products are partly the result of some important long-time shifts which have been taking place in the consumption and use of miilk. Over the last 10 years, consumption of whole milk and products made from whole milk have increased very greatly, while at the same time there has been a marked decrease in the consumption of butter. Between 1940 and 1950 the amount of milk consumed in the form of fluid milk, cream, cheese, evaporated and condensed milk, ice cream and dry whole milk increased from about 63.5 billion to 85 billion pounds annually. This is an increase in these uses of about 21.5 billion pounds. Meanwhile, milk used to produce butter decreased from about 45 billion pounds in 1940 to about 33 billion pounds in 1950.

Coincident with these shifts in consumption, farmers have also increased the proportion of their production which they deliver as whole milk rather than as cream. In 1940, only about 60 percent of the milk sold by farmers in the entire country was delivered as whole milk to factories; the rest was delivered as sour cream. By 1950, 80 percent of the milk was delivered as whole milk, and the trend continues.

The developments which have been taking place in the consumption of milk and in its delivery by farmers have special significance for the Nation as a whole and especially for the Wisconsin dairy industry. For the Nation as a whole, the decreases which have taken place in butter production and the increase in whole milk deliveries have made it possible to attain the high levels of consumption which now prevail for fluid milk and for products made from whole milk, such as cheese and evaporated milk. For Wisconsin, the consumption trends mean that demand is likely to be particularly favorable for the products in which Wisconsin milk is mostly utilized.

Wisconsin has also capitalized on the shift to whole milk deliveries. The shift started earlier in Wisconsin and has progressed further than in most other States where milk is produced predominantly for manufacturing purposes. In 1940, 83 percent of the milk sold was delivered in whole fluid form, and in 1950 whole milk deliveries reached 97 percent. This has made it possible for the State to act as a reservoir of milk for those areas where rapidly increasing consumption of whole milk has resulted in shortages. Large and increasing quantities of Wisconsin milk are being shipped for consumption in whole fluid form to southern markets and to nearby urban areas like Chicago and Milwaukee. Wisconsin and the rest of the country are benefiting from these increased shipments. Also because of these shifts, the dairy industry in Wisconsin has become closely associated with, and is influenced by, developments in the bottled milk part of the industry. For this reason you will be interested, I am sure, to know of some of the Government's programs which affect the bottled milk or, as we call it, the fluid milk industry.

An important development in the marketing of whole milk is the expansion in the number of Federal orders, under which fluid milk markets are regulated. As of today, some 44 large markets scattered throughout the country are operating under Federal orders. Seven more markets now have Federal orders than had they a year ago. Wisconsin milk moving to Chicago, Duluth-Superior, and Twin Cities has been subject to Federal order regulation for many years, and about a year ago the Federal order program was extended to Milwaukee.

I believe much progress has been made in the marketing of Wisconsin milk as a result of the splendid work done by cooperative associations of producers, such as your own organization, in taking steps to keep the Federal order program abreast of changing conditions.

For example, for a number of years, Wisconsin milk has been needed by

and has been supplied to distant markets, chiefly in the South and West, during the short season of the year. Much of this milk is shipped from Chicago pool plants and until recently was accounted for in the Cnicago pool at the Chicago Class I price. I am sure Wisconsin producers welcome this additional market, but in order for this milk to be available in the fall months, approximately one and one half times as much milk is produced in the flush season, for which there is no outlet in distant markets. The result of this situation was that Chicago pool plants and Wisconsin producers were carrying a large surplus of milk in the spring and early summer in order that milk might be available in the fall months for shipment to the South and West. Recently, through the efforts of cooperatives, the Chicago order was amended to provide that these bulk sales of milk outside the Chicago area in the short season should be accounted for in the Chicago pool at 70 cents per 100 pounds over the Chicago Class I price.

This action looks like a forward step in the marketing of milk, and we are studying its operation carefully. It should benefit Wisconsin milk producers, and at the same time it appears to be equitable for milk producers and consumers in distant areas where insufficient milk is available from local production in the short season of the year. The cooperatives have also taken the initiative in requesting changes in the prices of milk as needed, and more recently in combining the Chicago and Suburban Chicago orders.

The improvement in demand, with the resulting higher prices for milk and dairy products, has made it unnecessary for the Department of Agriculture to purchase large quantities of dairy products under the Government price-support program this year. Through late October this year, approximately 50 million pounds of nonfat dry milk solids, and only 880,000 pounds of cheese and 220,000 pounds of butter have been purchased for price support. This is in marked contrast to the situation in 1949 and 1950, when in the 2 years 242 million pounds of butter, 134 million pounds of cheese, and 677 million pounds of nonfat dry milk solids were purchased.

We succeeded in disposing of all of the 1949 and 1950 price-support stocks. We sold some back into domestic trade channels in a manner and at prices that would not impair the support program. Some of the cheese was sold to the United Kingdom and large quantities of nonfat dry milk solids were sold to the United Nations Children's Fund and to other agencies for special uses in occupied zones and other areas abroad. We also donated substantial quantities of these products for use in our school lunch programs, as well as for welfare uses here and abroad.

Price support for milk and butterfat is mandatory under the Agricultural Act of 1949 at such level between 75 and 90 percent of parity as the Secretary of Agriculture determines necessary in order to assure an adequate supply.

In 1950 prices of milk and butterfat were supported at about 79 percent of parity, but in 1951 the Secretary of Agriculture determined that prices should be supported at about the maximum level permitted under the

(Please turn to Page 79)

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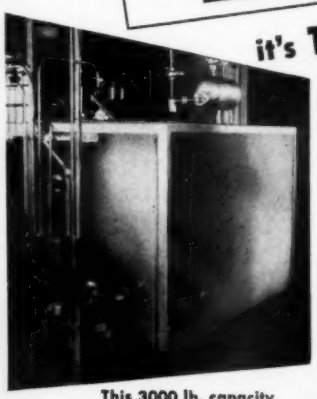

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DIET OF EXPECTANT MOTHERS

National Dairy Council Article Sees Milk as Essential Part of Pre-natal Food Selection

As part of its program for stressing the essentiality of milk to mankind throughout the life cycle, the National Dairy Council, in its November issue of the Dairy Council Digests, emphasizes that milk is the most important single food in the diet of expectant mothers.

NDC points out that milk, in combination with other foods, is of great importance to the individual in attaining maximum physical development, health, and vitality from the pre-natal stage through old age.

A summary of the article follows:

With improved methods of hygiene and obstetrical care, maternal mortality has shown a steady decline throughout the world, yet infant deaths occurring within the first days of life and the ratio of stillbirths to live births remains high, even in the United States.

The latter deaths are mostly closely linked to the complications of pregnancy and birth and to the health and nutritional status of mothers. They indicate clearly the need for more adequate control of maternal nutrition.

Milk Supplies Needed Nutrients

Diets which provide sufficient calcium, phosphorous, magnesium, and vitamin D are vital to the health of the pregnant mother and the normal development of her child, because these are the nutrients known primarily to be involved in the calcification of bones and teeth.

One quart of vitamin D milk per day in the earlier stages of pregnancy and one and one-half quarts in late pregnancy and lactation will supply a major portion of the needed quantities of these nutrients. Vitamin D has a vital influence on the calcification process.

Without adequate milk in the diet, it is difficult for the pregnant woman to maintain adequate stores of calcium. Concentrates of calcium do not supply other needed nutrients. Milk supplies fat, protein, phosphorous, magnesium and other nutrients which influence the efficiency with which calcium is absorbed and utilized for bone and tooth development of the child and secretion of breast milk.

There is evidence of a significant relationship between the protein intake during pregnancy and the incidence of anemia and abortion in the mother, and the weight, length, bone development, and general health of infants at birth. A diet containing foods of animal origin—meat, milk, eggs, cheese, fish—will supply adequate quantities of protein.

Dairy foods, eggs, and green leafy and yellow vegetables contain vitamin A, an essential in guarding against fetal damage and infection.

Two other nutrients, obtained from green leafy vegetables, are of vital importance to the pregnant woman. They are vitamin E and vitamin K. A deficiency of vitamin E may produce sterility in the male offspring, or lead to early death of the fetus. Vitamin K is important in averting death or abnormalities from bleeding in newborn infants.

●

DELIVERY HOURS REGULATED

The hours are established by a regulation, issued by State Milk Director Arthur F. Foran, and posted today in the Office of Milk Industry and filed with the Secretary of State. Copies of the regulation are being mailed to all licensed milk dealers.

The Office of Milk Industry's new regulation requires its licensees to deliver milk, both at retail for home consumption and at wholesale for resale and consumption off the premises, during the hours prescribed by the Legislature in Chapter 294, Laws of 1945.

"A regulation to complement the hours-of-delivery law has been sought by the milk dealers and by the unionized drivers," stated Chester D. Schomp, deputy director of the OMI. "It is issued under the authority assigned to the OMI by the State Milk Control Law. Our regular staff will enforce it."

The regulation provides exceptions for Sunday and holiday deliveries, and for relief if a hardship is worked upon a government agency or hospital. Retail deliveries to homes and wholesale deliveries to stores for resale or consumption off the premises may be made not more than two hours prior to 6:30 A.M. on legal holidays.

Milk for consumption on the premises of a wholesale place of business, such as a restaurant, may be delivered between 2:00 A.M. and 2:00 P.M. of any day. Where no Sunday deliveries are made to such premises, Saturday deliveries after 2:00 P.M. will be permitted.

NEW *Cationic* CLEANER for DAIRY and CHEESE PLANT EQUIPMENT

THE Key TO PERFECT SANITATION

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Thoroughly cleans inside of straight or irregular shaped cans. Multiple fingered rubber scrubber gets to every corner and crease. Electrically operated. Attach water line, plug in and it's ready to go.

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GORDON JOHNSON COMPANY
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NEW Johnson CENTRI-FLO CAN WASHER

Scrubs INSIDE ANY CAN GETS THEM CLEAN!

NDPC HEAD NAMED DIRECTOR

Van Bomel Elected to Board of Directors of Chrysler Corporation—Started From Bottom

Leroy A. Van Bomel, President of National Dairy Products Corporation, has been elected to the Board of Directors of Chysler Corporation, K. T. Keller, Chairman, announced following a recent board meeting in Detroit. Mr. Van Bomel will fill the vacancy created by the recent death of John A. Hartford, former Chairman of the Board of the Great Atlantic & Pacific Tea Company.

Born in New York City on December 15, 1885, Mr. Van Bomel, a descendant of Dutch settlers who have been dairymen and cheesemakers in New York State since colonial days, has spent most of his life in the dairy business, starting as a helper on a milk wagon during summer vacations from school.

Was President of Sheffield

Graduated from New York University with a degree in civil engineering, he joined the Sheffield Farms Company, of which his father was one of the founders, in 1909 as an engineer. Mr. Van Bomel was elected Vice-President of Sheffield Farms Company in 1924 and in 1926 became President, an office he held until 1941.

In 1925, when Sheffield Farms became a subsidiary of National Dairy Products Corporation, Mr. Van Bomel became a Vice-President and Director of the parent company. He became a member of the Executive Committee in 1927 and served as Executive Vice-President from 1937 until 1941. He was elected President of National Dairy in 1941 and Chairman of its Executive Committee in 1942.

During the ten years of Mr. Van Bomel's presidency, sales, earnings, and dividend payments of National Dairy have more than doubled and the company has grown to be one of the biggest food companies in the country, with total sales of more than 900 million dollars a year and it is estimated that sales for 1951 will exceed a billion dollars. Among its principal subsidiaries are Kraft Foods Company, Rieck-McJunkin Dairy Company, Sheffield Farms Company, Breyer Ice Cream Company, Breakstone Bros., Luick Dairy Company, Supplee-Wills-Jones Company, General Ice Cream Corporation, Southern Dairies, Inc., Chestnut Farms-Chevy Chase Company and Belle Vernon Milk Company.

In addition to his activities with National Dairy and its associated companies, Mr. Van Bomel has many other business affiliations. He is a director of the Manufacturers Trust Company and the American Surety Company; a trustee of the Committee for Economic Development; a member of twelve other business and professional groups, including the Advertising Council, Chamber of Commerce of the State of New York, National Industrial Conference Board, and the American Society of Mechanical Engineers.

He is also a director of the New York Eye and Ear Infirmary; a trustee of the Nutrition Foundation; a committee member of the Society of the New York Hospital, and the Presbyterian Hospital Corporation; and a member of the Visiting Committee of New York University.

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IN THE ORANGE TUBE

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ORDER TODAY
$3.00 for 6 — 4 oz. tubes
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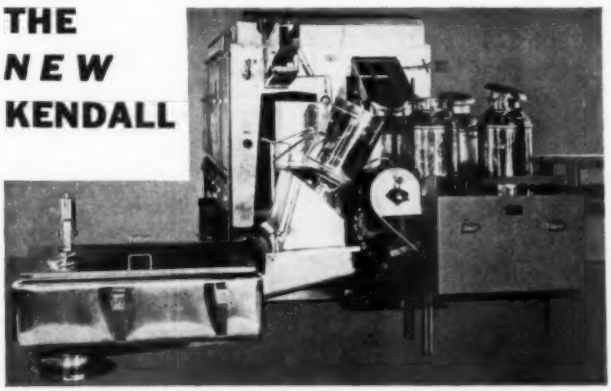
THE NEW KENDALL



RETURNLINE CAN WASHER

FEATURING A 150° DUMPING ARRANGEMENT

✔ THESE FEATURES

★ Partition separates cleaning from sterilizing stations.
★ Saves costly space.
★ Provides maximum visual inspection for incoming AND outgoing cans.
★ Eliminates necessity for separate reject conveyor.
★ Completely accessible for cleaning and adjusting.
★ All controls within easy reach.

KENDALL-LAMAR CORP.
POTSDAM, NEW YORK

MARGIN USE

(Continued from Page 16)

six dealers were retail sales, leaving 67.15 per cent of the total sales on the wholesale level. The proportion of total Class I sales made at retail did not change markedly from month to month. The largest change occurred from August to September, when Class I sales at retail as a percentage of total Class I sales changed from 31.5 per cent to 36.7 per cent.

Average daily Class I sales were lowest during July and highest during February—a 5.15 per cent change (Fig. 5). Average daily Class I sales at retail were lowest during August and highest during September. The variation amounted to 17.55 per cent. Average daily sales of Class I milk at wholesale were lowest during September (long Labor Day week end) and highest during June. However, this variation was only 9.29 per cent. The variation in total Class I sales was less than the variation at retail or at wholesale level.

Records Speak for Themselves

Let's try summing up what we discovered about these six Seattle firms. First, there wasn't much seasonal fluctuation in Class I sales as compared with production. Second, the nature of Class I wholesale-retail sales varied pretty much with each individual firm. Last, these firms for this period were operating on the narrowest margin reported for any major market. This latter finding emphasizes the necessity for such firms to re-examine periodically their Class I operations so that their resale price is in line with their operating costs.

Certainly the narrowness of dairy operating margins could be pointed out profitably to the general public. The public should understand that not all milk purchased from the farmer is used in fluid milk form. It should be made to recognize that slight increases in the farm price of milk and other operating costs tend to narrow the distributor's operating margin; that the only way he can stay in business is to raise consumer prices or cut his services. All of this should be part of a general program to explain to the consumer the process of getting dairy products from the cow to his table.

PENN STATE SHORT COURSE

The annual winter short course in market milk at Penn State will be held from January 28 to February 9, 1952. This course is primarily designed for workers in milk plants and dairies who feel the need of further instruction in the technical aspects of the handling and processing of fluid milk and related products commonly marketed by milk dealers.

In these days of ever-increasing controls, it is more important than ever for the distributor to keep accurate, up-to-date cost and income records. He has to keep that margin great enough to allow him to stay in business.

With OPS freezing many dairy prices at current levels, firms caught with narrow operating margins are in a spot! Caught in a margin squeeze like that such firms will have to produce records and data showing that the present setup is working a hardship on them. Keeping close records on that margin would really pay off.

DAMROW — TRI-CLOVER

Tri-Clover Machine Co. has transferred all manufacturing and selling rights covering the line of former Specialty Brass Heaters and Coolers to Damrow Brothers Company, of Fond du Lac, Wisconsin. As previously announced, this heater and cooler line was acquired in the overall purchase of Specialty Brass Company by Tri-Clover. Effective October 15, all correspondence relative to the former Specialty Heaters and Coolers should be addressed to Damrow Brothers Co.

It is Tri-Clover's understanding that Damrow Brothers will not only continue to manufacture these items, but will further expand this established heater and cooler line.

●

LOOK DAD, I'M SELLING

(Continued from Page 54)

results, he turned to the dairy field, and sold dairymen the idea of offering his mold to children as a premium with the purchase of chocolate drink, orange juice, and other items popular with youngsters.

The result has been little short of sensational. Since July, 1951, Brittain has sold almost a million molds—with more and more dairies, orange juice concerns, and flavor manufacturers clamoring to get on the band wagon. And he has plans to branch out into other food fields where youngsters are the important buying factor. Heavy advertising by the dairies, beamed directly at children, is doing what Jerry showed his Dad had to be done: To sell 'em, you've got to tell 'em—and the "'em" have to be the right people!

Meanwhile, young Jerry is looking around for more worlds to conquer.

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MILK LEVEL CONTROL
controls—to within 1/100 inch—the level of milk or mixtures in tanks, vats, pasteurizers, coolers, freezers, fillers, etc.
Absolutely sanitary
Instantly cleaned
No moving parts
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Saves Milk—Money—Time—Labor
Used by leading dairies, coast to coast.
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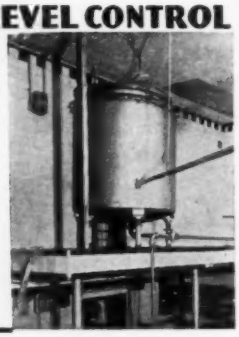

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COTTAGE CHEESE COAGULATOR
SCIENTIFICALLY MADE FOR THE FINEST COTTAGE CHEESEMAKING RESULTS
Outstanding Economy
Backed by More Than 70 Years Experience
CHR. HANSEN'S LABORATORY, INC.
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THE DAIRY SITUATION

(Continued from Page 7)

law in order to encourage dairy farmers to maintain a high level of milk production. Under this program the announced purchase prices for butter, cheese, and nonfat dry milk solids are somewhat higher than purchase prices in effect in 1950. The higher support levels this year recognize the importance of the maintenance of a high level of production of milk and other dairy products. They also recognize the difficulties in maintaining high level production in the face of increased costs, labor scarcity, and more favorable returns from certain other farm enterprises in some areas.

The average farm prices of manufacturing milk and butterfat at the present time are above the announced support prices. In mid-September the U. S. average farm price of milk at wholesale sold by farmers to plants and dealers, adjusted for seasonal variation, was 93 per cent of the parity price.

While the Agricultural Act of 1949 and the Marketing Agreement Act of 1937 provide mechanisms for the Department to establish floors under the general levels of farm prices of milk and butterfat, the Defense Production Act of 1950, as amended, provides a mechanism for the Office of Price Stabilization to establish price ceilings. The Defense Production Act set forth a general provision that no ceilings can be established for agricultural commodities below parity price levels. It also contains a provision that no ceilings can be issued which would nullify the Federal milk marketing orders.

The initial General Price Ceiling Regulation issued by OPS last winter provided that ceilings would automatically become effective on prices to producers for milk and butterfat as soon as the Department of Agriculture announced that the U. S. average prices of milk and butterfat reached parity. The regulation has since been revised to provide that such ceiling prices will not become effective until and unless OPS announces that the requirements of the Act have been met and that such ceilings are in effect.

MOVIES FOR MILK ADVERTISING

United Film Service, Inc., Kansas City, Mo., one of the nation's largest producers and bookers of advertising films for movie theatres, has launched an advertising campaign in trade journals promoting the use of their "Screen Broadcast" Syndicated Spot Movie Ads by local advertisers.

The campaign starts in November issues of bank, dairy and florists' trade papers – with an expanded list of publications covering a wide variety of fields planned for next year.

The series points out that, in the movies, a product or service may be demonstrated by sight, sound, action and color in commanding size, getting virtually 100% attention by reaching people when they are comfortably seated in a darkened theatre with all eyes focused on the screen and all ears tuned to the sound track.

The Defense Production Act Amendments of 1951, approved by the President on July 31, set forth a further provision concerning price ceilings on manufacturing milk and butterfat. They provide that "no ceiling prices to producers for milk or butterfat used for manufacturing dairy products shall be issued until and unless the Secretary of Agriculture shall determine that such prices are reasonable in view of the price of feeds, available supplies of feeds, and other economic conditions which affect the supply and demand for dairy products, and will insure a sufficient quantity of dairy products and be in the public interest." This additional provision reflects the further recognition by the Congress of the importance of a high level of milk production.

I would not want to minimize the uncertainties and the difficult problems which are on the horizon for the dairy industry. All of us hope that international tension will ease and that the entire world will speedily reach the status of peace and freedom. The prospects for this in the immediate future are not bright. But in this country of ours, the problems of each decade and each generation have in their time seemed the most difficult and trying. Certainly none of us is capable of judging whether the situation of the 1950's is more difficult than that of the 1940's—or perhaps of the 1850's. This much is clear —we have always come through. I am sure that all of us have the faith and confidence that we shall surmount the 1950's and go forward as we have before.

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Are You Looking for a Supply of Grade A Milk or Cream?

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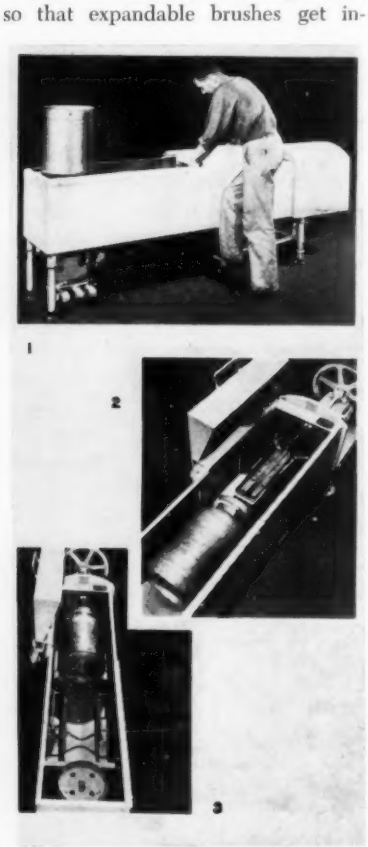
USING OUR SEPARATOR

Automatic Can Scrubber

A ROTATING BRISTLE brush can scrubber designed to get at the interiors of milk cans has been placed on the market by the Rice and Adams Equipment Division of the Pressed Steel Car Company.

The machine provides for a prerinse with hot or cold water to remove loose soil. The next step is to place the can horizontally upon parallel grid guides in the washing tank. The can is moved, in this position, so that expandable brushes get inside it and scrub the interior surface. The washing tank itself is filled with water at 120 degrees that has been charged with detergents. Pressure of the inside brush which rotates causes the can to rotate also. This rotary action is utilized to scrub the outside of the can by having it pass over a stationary brush. The degree of pressure that the inside brush exerts is controlled by a foot pedal.



After the can has been scrubbed on the inside and outside it is again placed mouth down on the rinsing mechanism and given a final rinsing and sterilization. Three foot pedals are grouped for easy operation beneath the tank. They are connected to push valves on the steam and water lines and are so arranged that water only, or steam only or a mixture of water and steam may be applied to the can.

For further information write to Rice and Adams Equipment Division of the Pressed Steel Car Company, Inc., Buffalo 17, N. Y.

●

Help for the Office

VISIBLE Tip follow-up folders allowing fast action after one glance are the subject of a new booklet recently issued by Remington Rand Inc. The visible index label shows what records are inside the folder, while the visible-tip colored signal flashes the next due-date. You won't forget to remember with visible tip follow-up folders, which can be adapted to production scheduling, purchase orders, customer service, collection, sales orders, medical follow-ups and accounts receivable. Request pamphlet LBV 567 from Management Controls Division, Remington Rand Inc., 315 Fourth Avenue, New York.

Visible tip colored signals, moved easily and crimped to stay where set, highlight each folder for action when called for. Pen-posting is eliminated since merely moving the signal indicates any change that may have occurred, and the incorporation of folders into present filing systems does away with the necessity of a separate file for follow-up.

Special sizes of the folders include 8x5½ inches and 6x9 inches, as well as the regular letter and legal sizes. The ability of these folders to be used over and over again for other follow-up jobs eliminates the need for expensive replacements.

Cottage Cheese Container

G. P. GUNDLACH & COMPANY, Cincinnati merchandising consultants to the dairy industry, has designed and developed a cottage cheese container made of transparent plastic material designated as the "Fiesta Plastic Deep Dish."

The "Fiesta" dish, available in red, green, sun-gold and white provides a continuing-use container for kitchen or table use after the original purpose has been attained.

By offering the "Fiesta" dish in a color range, housewives can obtain a useful collection of the attractive dishes for household needs.

The Gundlach organization is marketing the "Fiesta" dish to milk and dairy products' firms distributing cheese through retail outlets or direct delivery to consumers.

●

Cream Sales Novelty

NEW Speed-E-Whipper designed to save housewives time and work in whipping cream is now being distributed nationally through dairies and creameries, according to the L. B. Sales Company, Los Angeles. The product is a natural tie-in to promote sales of whipping cream and milk, the manufacturer points out. It is also recommended to blend or mix salad dressings, malted milk, beat eggs, smooth gravy, meringues, cocktails, cake fillings, frostings, children's formulas, frozen orange juice and other uses. Speed-E-Whipper beats, blends, whips, aerates and homogenizes every time the plunger makes a complete cycle, the company adds. It is engineered to whip cream in a vacuum, forcing air into the cream which is said to be the secret of the whipped cream staying durable for days without separating. Other advantages listed by the manufacturer include: whips cream in seconds eliminating splash, muss or fuss; not necessary to chill bowl; whips small quantities of cream; easy to clean; saves using additional utensils; glass container convenient for refrigerator storage; simple to operate

and nothing to get out of order. Red lettering permanently applied onto the glass container identifies name and marks graduations in ounces and cups on the back. Duraglas container with applied color lettering supplied by Owens-Illinois Glass Company; red plastic top by Teksun Corp.; stainless steel disc by A & M Metal Stamping.

●

Superplate's Life

PLANNED Maintenance Manual No. 3 on Superplate equipment is the latest in a series of practical booklets issued by Cherry-Burrell Corporation, 427 W. Randolph St., Chicago 6, Illinois, to help customers keep their equipment in good operating condition.

Its 12 pages are packed with explicit directions on installing, operating, inspecting, cleaning, and lubricating the Superplate, whether used as a cooler, heater, or Shortime Pasteurizer.

The reader will find the answers to such possible questions as: How tight should the plates be? What will happen if operating limits are exceeded? When is re-gasketing required? In the Shortime Pasteurizer what may cause the timing pump to lose capacity? What may happen if the press is opened while the plates are hot? Why shouldn't steam alone be used to sterilize the Superplate? Numerous explanatory photographs and drawings are included.

The suggestions and information contained in this manual are arranged so that they can be used to establish a Planned Maintenance Program tailored to individual plant needs.

●

Cottage Cheese Booklet

CONDENSED, easy-to-follow instructions on cottage cheese making have recently been published in booklet form by Steel & Tube Products Company, 200 West Olive Street, Milwaukee 1, Wisconsin, manufacturers of Steriline Cottage Cheese Draining and Storage Trays, Steriline Pasteurizers, and Steriline Storage Tanks.

The booklet covers the various steps of the Short Time Set and Long Time Set. Cottage cheese makers will find this booklet of great interest in helping them to produce a higher quality cottage cheese. Free copies are available on request.

Bulk Handling Tank

NEW ARE the Steinhorst Bulk Milk Cooling Tanks in 200, 300 and 400 gallon capacities. They are specially designed to provide both fast cooling immediately after milking and safe, sanitary low temperature storage until tank-truck pickup.

Each tank is equipped with interchangeable covers, a stainless steel liner, built-in cold section at bottom, agitator, measuring stick and thermometer.

The legs of the tank are adjustable and the tank bottom is pitched to provide complete drainage.

The outlet, designed to receive a standard sanitary valve, is 1½" in diameter unless otherwise specified.

The tank is of sanitary construction and easy to clean. All parts that come into contact with the milk are constructed of polished stainless steel, type 302.

The slow speed agitator can be lifted out without removing its motor.

All sizes are approximately 8% over their rated capacities. The refrigerated (evaporator) surface of all tanks is under ¼ of the volumetric capacity and over 1/3 of the surface area.

A well is provided on the rear wall of the inner liner to receive the bulb of the temperature control.

Additional information and specifications are available on request.

●

Dip For Wood

A NEW member of the Fungus-Ban family is being announced by The Wilbur & Williams Company. This is a copper napthanate dip for wood to be exposed to immersion in water. This product imparts a green color to the wood, as indication that it has been treated, and gives primary protection against dry rot. This preservative treatment can be painted over with ship bottom paint or normal paint after 24 hours drying as it is of a non-crystallizing nature in itself.

This product supplements the other products the company is making in the wood preservative field, which consist of separate products for dimensional control, toxic control for wood preservation. For further information, write The Wilbur & Williams Company, Boston 35, Mass.

●

Fuel Oil Manual

THOSE WHO buy, use or sell fuel oil for heat-treating, building heating, or power generation will find much of value in Fuel Oil Manual by Paul F. Schmidt, chief chemist, Allied Oil Co., Inc., Cleveland, Ohio. The author has been associated 15 years with this company, which markets in excess of 500 million gallons of fuel oil annually, and he is in charge of testing all oils received and in blending oils for specific specifications. The book is the result of years of experience in trouble shooting.

Covered in this book are complete data on the properties of fuel oil, the possibilities and limitations of each grade of oil, methods which can be used to assure uniform quality and efficient combustion, how to diagnose fuel oil troubles and how to remedy them, and particularly important, how to get maximum value from each fuel oil dollar.

The text, which includes 34 tables, is divided into 24 chapters covering chemistry of petroleum, petroleum refining processes, grades and types of fuel oils, gravity, heat of combustion, viscosity, water and sediment, carbon, ash and salt residue, flash and fire points, pour point, sulfur, color, distillation, preheating of oils, sampling storage tanks, stability of fuel oils, fuel oil treatments, reclaimed fuel oils, blending of oils, transportation and storage, fuel oil specifications, and complaints and causes of troubles.

Fuel Oil Manual, by P. F. Schmidt. Fabrikoid bound, 6 x 9 inches, 160 pages. Published by The Industrial Press, 148 Lafayette St., New York 13, N. Y. Price, $3.50. Canadian or overseas postage 40c.

WANTS and FOR SALES

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EQUIPMENT FOR SALE

FOR SALE — 8 wide Meyer-Dumore bottle washer; 800 gallon Union Steam viscolizer with new C.P., stainless steel head; 200 gallon cheese vat; 5 x 5 ammonia compressor. Write to Box 186, care of this publication. 12-M-51

FOR SALE — 40M Misprint sealright conical quart milk containers; will sell any amount, $25.00 per M. F.O.B. Bristol, Va. Write to Pinemont Farms, Inc., 1430 West State Street, Virginia. 12-M-51

FOR SALE — 1 Cherry-Burrell Cheese Vat, 50 gallon stainless steel. Write to Pinemont Farms, Inc., 1430 West State Street, Bristol, Virginia. 12-M-51

FOR SALE — 1 Cherry-Burrell, No. FP-90 Friday Butter Press, Serial No. 7396, equipped to print ¼ pounds. Write to Pinemont Farms, Inc., 1430 West State Street, Bristol, Virginia. 12-M-51

FOR SALE — 50 H.P. Clayton Steam Generator — new coil, new insulation, new thermal tube. Looks and runs like new. Reason for selling—installing larger unit. Can be seen in operation. Price $2250. Write to Box 195, care of this publication. 12-M-51

FOR SALE — Double pipe ammonia condenser. 2 - 12 bank, 20 feet long; 1 - 6 bank, 20 feet long. Write to Highland Dairy Products Company, R.D. No. 3, Coatesville, Pennsylvania. 12-M-51

EQUIPMENT FOR SALE

FOR SALE — 1 - 5000 No. C-B Plate Cooler for City Milk bottling. 3 - 300 gallon C-B Spray Type Pasteurizers, One Right Hand and Two Left Hand. Includes Air Space Heaters and Taylor Water Temperature Regulators. All equipment is A-1 condition. Available about January 1st, 1952. We invite you to personally inspect the equipment. Write to Bridgeman Creameries, Inc., Duluth Minnesota. 12-M-51

FOR SALE — Ready to drive away—used delivery equipment. We have UM and ULM Divcos; Dodge i tons with Dekalb bodies; wholesale milk truck and bodies. This equipment is suitable for regular routes or for use as a spare. We are the largest lessors of milk delivery equipment West of the Mississippi. Call or write BAKER TRUCK RENTAL, INC., 302 North Osage, Wichita 2, Kansas. 12-M-51

REBUILT — Pasteurizers, Milk Coolers, Bottle Fillers, Ice Machines, Plate Coolers and Heaters, Homogenizers and Bottle Washers. Send us your requirements. Ohio Creamery Supply Company, 701 Woodland Avenue, Cleveland 15, Ohio. 12-M-51

FOR SALE — Good used milk plant equipment. Late type list covering equipment available, with prices, mailed upon receipt of your advise as to what is needed. Write to Otto Biefeld Company, Watertown, Wisconsin. 12-M-51

EQUIPMENT FOR SALE

FOR SALE — 2 - 3,750 Gallon Stainless Steel Tanks. Horizontal. Insulated. 6' 9" Diameter by 15' 6" long 1 hp Gearhead motor driven agitator mounted on top. Sight glass. Manhole. Completely reconditioned and like new: Buffovak Double Drum Dryer, Size: 32" by 72". Serial No. 3438. Complete with stainless-steel hood, knives, pans, conveyor, crusher, etc. Rolls are in excellent condition. Cherry-Burrell Superplate Heater, 20,000 lbs. per hour capacity: 25 transfer plates Serial No. 24C-45-744. Complete with C-24 press, circulating unit, pump, and controls. Mojonnier Tubular Heat Exchanger. Stainless-Steel. 16,000 lbs. per hour capacity. 32 tubes. 40-90 degrees. Model 16A. No. TH 17. Mojonnier Tubular Heat Exchanger. Stainless-Steel. 8,000 lbs. per hour capacity. 12 tubes. Model 6A. No. TH 16. Union Steam Pump Viscolizer. Serial No. 201052. Stainless-Steel head. Size: 800 gallon per hour. Union Steam Pump Viscolizer. Serial No. 170296. Stainless-Steel head. Size: 800 gallons per hour. Union Steam Pump Viscolizer. Serial No. F170649. Stainless-Steel head. Size: 800 Gallons per hour. All viscolizers are complete with 25 H.P. motors and are in excellent condition. Stainless-Steel hotwells. 100 to 650 gallon capacity. Scales, Stainlless-Steel jacketed kettles, 40 - 250 gallon, portable agitators, tanks and various other dairy equipment in stock. Write for our current catalog. Write to the AARON EQUIPMENT COMPANY, 1347 So. Ashland Avenue, Chicago 8, Illinois. Telephone Chesapeake 3-5300. 12-M-51

FOR SALE — Pfaudler King D-5 filler & capper 51 and 56mm. Heads; B.H. 45 cellophane hooder; 200 Cherry Jr. stainless steel head Homogenizer; 35 Gr. 56mm. stub round bottles; 8 Gr. 56mm. long round bottles; 15 H.P. Flueless boiler oil burner; International ton truck; 5 by 5 Creamery Package ammonia compressor condenser and receiver. Write to Walter U. Collins Dairy, 1759 East Falls Street, Niagara Falls, New York. 12-M-51

FOR SALE — CHERRY-BURRELL Model "E" Soaker Type Washer; Model 841 Sanitary Viscolizer, 800 gallons per hour with Style B Volumetric Gauge, 220 volt, 60 cycle, 3 phase motor. Both in good operating condition. Write to Gosselin's Dairy, Chicopee, Massachusetts. 12-M-51

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EQUIPMENT FOR SALE

FOR SALE — 1 Cherry-Burrell, C H 50 Butter Churn, Serial No. 5877, 1 H.P. 3/60/220 Volt, motor mounted, No. 62971 Pipe Guard Rails. Write to Pinemont Farms, Inc., 1430 West State Street, Bristol, Virginia. 12-M-51

FOR SALE — One Model 10E Cherry-Burrell Bottle Washer, 10 wide that will fit all sizes of bottles. One right hand Gray GV 20 vacuum filler with attachments for cover cap closure and stainless steel cap tunes. This equipment 5 years old and in good condition mechanically. Make us an offer. Write to Garden Farm Dairy, Inc., Box 363, Denver, Colorado. 12-M-51

FOR SALE — 1 - Rogers 4 foot Coil Copper Vacuum Pan with Granger Steam operated combination water and vacuum pump. In very good condition. Available about February, 1952. Replacing with larger unit. Price $1200.00. 1 - Frick 7½ H.P. 3 Cylinder Self Contained Freon Compressor with all controls. In very good condition. $500.00. 1 - Greenwood 5 x 5 Ammonia Compressor with Motor and Switches. $150.00. 1 - 42nd 3 Compartment Bottle Washer. $250.00. 1 - Milwaukee G-70 Bottle Filler, Stainless Steel Bowl, 3 Plug and 3 Cover Cappers for 56mm. Bottles. Excellent condition. $600.00. 1 - 500 gallon Cherry-Burrell Model R Cheese Vat. Stainless Steel Lining. Painted Metal exterior. Curd knives and Cover included. $300.00. 2 - Steam Driven Boiler Feed Pumps for 150 H.P. Boiler. $50.00 each. All items offered subject to prior sale. Available for inspection at our plant. We crate and deliver to railroad. Prices F.O.B. Johnstown Sanitary Dairy Company, Johnstown, Pennsylvania. 12-M-51

EQUIPMENT FOR SALE

FOR SALE — 1000 gallon Cherry-Burrell Model SVS all Stainless Steel Storage Vat with cooling coil; 800 and 1000 gallon Horizontal Coil Vats with stainless steel linings and T.C. coils; 5000 lb. and 11,000 lb. Short Time Pasteurizing Systems; 100 to 400 gallon Stainless Steel Pasteurizers; Creamery Package Plate Cooler, 58 stainless steel plates; Mojonnier Junior Stainless Steel Cabinet Cooler, 12 wings 40 tubes high; Cherry-Burrell Junior Cabinet Cooler, 7 wings 36 tubes high; 12,000 lb. and 20,000 lb. Clarifiers; 75 to 1500 gallon Homogenizers or Viscolizers; 1000 to 4000 gallon Pfaudler Glass Lined Tanks (For By-Products); Bottle Fillers, Bottle Washers, Pumps, etc. Many other desirable items — write or wire your requirements. Write to Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, N. Y. Telephone—MUrray Hill 2-4616. 12-M-51

SPECIAL OFFERINGS — Morpac Type "MX" Butter Wrapping machines; Complete Receiving Room Equipment consisting of Scale, 1000 lb. Stainless Steel Weigh Can, Stainless Steel Receiving Vat, Rice & Adams 12 C.P.M. Washer, also lot of incoming and outgoing Can Conveyor. Write to Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, N. Y. Telephone—MUrray Hill 2-4616. 12-M-51

PRODUCT FOR SALE

FOR SALE — Cottage Cheese in wholesale quantities steady throughout the year. Creamed as purchaser desires. Write to Box 199, care of this publication. 12-M-51

DESIGN ENGINEER

DAIRY DESIGN ENGINEER (AGE ABOUT 35) WANTED FOR DESIGN AND DEVELOPMENT ON DAIRY PROCESSING EQUIPMENT LINES. PREVIOUS EXPERIENCE IN SIMILAR WORK REQUIRED. PROGRAM OF DEVELOPMENT WITH WELL-KNOWN MANUFACTURER OFFERS OPPORTUNITY FOR RESPONSIBILITY AND EXERCISE OF CREATIVE ABILITY. COMPANY HAS EXCELLENT PROGRAM OF EMPLOYEE BENEFITS. SUBMIT RESUME OF EXPERIENCE TO: — Box 198, care of American Milk Review.

EQUIPMENT FOR SALE

FOR SALE — 550 and 1,500 gallon brine tanks, coils and compressors; 6 x 6 ammonia compressor; 200 gallon M. G. Homogenizer; 100 and 200 gallon pasteurizers; four wide bottle washer; 20 H.P. vertical boiler; G-70 filler; four can buttermilk cabinet; food locker boxes; round can washer; 56mm. bottles and cases; No. 3 Int. separator; Int. milking machine; 34 x 115 brick building. Write to Cliffor M. Weise, 101 Bertha Avenue, Donora, Pennsylvania. 12-M-51

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FOR SALE — Creamery and Produce Plant, doing good volume of business, buy cream, eggs and poultry. Located in Southwest Minnesota. Write to Box 194, care of this publication. 12-M-51

FOR SALE — Modern Milk and Ice Cream Plant, located in south central part of MAGIC CIRCLE, in Southwest State. Doing approximately $375,000 business per year. This plant can be bought as an investment as well as a business. Price based before recent inflation. Write for particulars to Box 197, care of this publication. 12-M-51

WANTED — Large or small supply of skim for cheese to be manufactured on premises, unequalled opportunity. Reply to Box 136, care of this publication. 12-M-51

WANTED—To purchase or lease, Milk Plant that is under the New York Milk Marketing Order — 500 to 1,500 cans of milk per day; either a shipping station or a manufacturing plant. Write full details in letter, and send reply to Box 174, care of this publication. 12-M-51

WANTED TO BUY

WANTED—Single compartment stainless steel weigh tank. Write to Box 185, care of this publication. 12-M-51

WANTED — To buy or rent, one automatic filing and closing machine for American Can Containers, 20 or more bottles per minute. Write to Box 184, care of this publication. 12-M-51

WANTED — Cherry-Burrell G-70 or G-100 milk bottle filler with 48mm filler valves and coverite cappers. Write to Shawsheen Stock Farm, Andover, Massachusetts. Phone Andover 1268 M. 12-M-51

WANTED — Cooler covers for 8 foot cooler (36 one inch tubes). Must be in good condition. Write to Shawsheen Stock Farm, Andover, Massachusetts. Phone Andover 1268 M. 12-M-51

WANTED TO BUY

WANTED — One atmospheric drum drier preferably 32" x 96". Please write giving full particulars to THE DELTA GLUCOSE REFINERY LIMITED, R.R. No. 3, VANCOUVER, BRITISH COLUMBIA, CANADA. 12-M-51

HELP WANTED

PLANT MANAGER WANTED — Must be experienced and competent to supervise a pasteurizing and bottling plant receiving from producers 60,000 pounds fresh fluid milk daily. Also competent to supervise the manufacture of Ice Cream, Cottage Cheese, Cultured Buttermilk and Sour Cream. Must be experienced in plant sanitation, personnel and plant inventory control, etc. If you believe you can qualify for this permanent position, state full qualifications, references, age, etc., in first letter. Only those of proven ability considered. All inquiries held in strict confidence. Providing first letter is satisfactory, a personal interview will be arranged. Please reply to: Mr. H. A. Putnam, F. B. Mallory, Inc., 55 Pomona St., Springfield 8, Mass. 12-M-51

SALESMEN — We desire men of high calibre presently selling dairies to handle our plastic promotional items of proven volume. Only men who are firmly established in the field and have experience selling the top dairies need apply. Give complete resume in your first letter. Write to Box 180, care of this publication. 12-M-51

WANTED — Sales manager and supervisor to take charge of sales and routes for privately owned dairy located in lower Michigan. Operating 24 routes with excellent prospects for expansion. Top salary with additional compensation for increased sales. Good future for qualified man. Write fully giving full details. All correspondence kept in strict confidence. Write to Box 166, care of this publication. 12-M-51

POSITION WANTED

POSITION WANTED — Aggressive sales manager desires a change in employment away from Pacific Coast. Outstanding record. At present managing dairy doing $1,000,000.00 this year. Write to Box 181, care of this publication. 12-M-51

Sales representative covering Minnesota, North and South Dakota seeks outstanding product or service to sell in that area. Have franchise, experience in the event such representation is needed for aggressive promotion. Age 40, college education and have available any number of excellent references pertaining to my business and moral integrity. Commission arrangement quite suitable, and any proposal of merit will be considered. Write to Box 192, care of this publication. 12-M-51

MISCELLANEOUS

PURE TREE RIPENED LIME JUICE? ORANGE OR TANGERINE JUICE FOR BETTER SHERBETS. Sample order, 12 Number 10 cans, any combination, only $15.00. Write to Choate and Atkins, Eustis, Florida. 12-M-51

Dairy Orange-ade base made from fresh oranges. Write for sample to Bradway Chocolate, New Castle, Indiana. 12-M-51

Dairy Grape-ade is profitable. Your total cost 9c per quart. Write for sample to Bradway Chocolate, New Castle, Indiana. 12-M-51

Chocolate Milk made from Bradway genuine chocolate powder or syrup is better. Write for sample to Bradway Chocolate, New Castle, Indiana. 12-M-51

FOR SALE — Truck lettering and trade mark decals made for your trucks and store advertising. Easy to apply, uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Company, 827 South Harvery, Oak Park, Illinois. 12-M-51

FOR SALE — Boost your sales of Egg Nog, Cottage Cheese and Buttermilk with new attractive streamers. Also have fine line of Holiday and Dairy Products Bottle collars. For samples and prices write to E. R. QUACKENBUSH, 424 Fair Street, Berea, Ohio. 12-M-51

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INDUSTRY PROBLEMS

(Continued from Page 72)

terial counts and a better product where milk is pasteurized as soon as possible.

There are certain conditions of storage, however, which can affect bacterial counts in other ways. Prolonged holding at low temperatures tends to make the bacteria very resistant and during pasteurization we may kill 90 per cent or less of the bacteria present. Holding milk warm, on the other hand, will increase the numbers present to an extent influenced by the temperature and the time of holding. but the bacteria present will be much more easily killed. Under these conditions, we might kill 99.99 per cent of the organisms. In the second case. it is conceivable that the bacterial count could be lower than when the milk was carefully held, although the reverse is usually true. We certainly do not advise this procedure and have a strong feeling that it should be immediately pasteurized and cooled.

During the cooling period there is generally a slight reduction in bacterial count. This decrease is not large and is generally not of importance in comparison to the advantages of immediate pasteurization.

●

GMC TRUCKS

(Continued from Page 46)

cedure is resulting, in most dairies, in money lost for replacement parts that could easily be avoided, Jennings said. As an example, one fleet had 28 clutch repair jobs in two and one-half years. This figure was not unreasonable until it was seen that 16 of these jobs required replacement of both clutch disc and pressure plate. If proper records had been kept to show when the clutch disc needed replacement, damage to the pressure plate would have been avoided and replacement of the plate unnecessary.

Jennings recommended several practices which, he said, could not fail to improve a dairy fleet operation, bring about lower operating and maintenance expenses and extend economical vehicle life. These were: 1. Install in your fleets simple but effective maintenance record systems which will tell what you ought to know and when you ought to know it. 2. Install a good Preventive Maintenance program designed to fit your operation. Then see to it that this program is carried out. Bring every truck in the fleet up to first class mechanical condition before it is placed on P.M. 3. Survey your maintenance operation to see whether you have adequate facilities and personnel to do the job that is required. Where deficiencies exist, correct them. 4. Survey your fleet to see which vehicles need replacement. 5. Take an active and continuing interest from a constructive standpoint in the operation of your fleet. Cost the operation in an intelligent manner and do something about controlling out-of-line expense.

●

MILK CONTROL HEADS MEET

Approximately 100 milk control officials from the United States and Canada will exchange ideas on new practices at their fifteenth annual meeting next month. Kenneth F. Fee, New York State Director of Milk Control, who is also secretary of the International Association of Milk Control Agencies, announced that the yearly session will take place in Miami, Florida, November 15, 16 and 17.

Prominent on the program speakers and discussion leaders are Bruce J. Campbell, Chief, Bureau of Milk Control, Sacramento, California; L. K. Nicholas, Jr., Administrator, Florida Milk Commission, Jacksonville, Florida; E. W. Tiedeman, Chief, Dairy Branch, Office of Price Stabilization, Washington, D. C.; Dr. Leland Spencer, Professor of Marketing Cornell University, Ithaca; G. M. Blackstock, Chairman Public Utilities Commission, Edmonton, Alberta; Park Carpenter, Milk Control Board, Boston, Mass.; E. C. Carr, Chairman, The Milk Board, Vancouver, British Columbia; Richard J. Werner, Assistant Executive Director, Milk Industry Foundation, Washington, D. C.; H. L. Forest, Deputy Director, Dairy Branch, Production and Marketing Administration, Department of Agriculture, Washington, D. C., and C. Farris Bryant, Speaker Designate 1953 Florida Legislature.

The milk control representatives will conduct all Miami sessions at the Biscayne Terrace Hotel. Mr. Nicholas is president of the organization.

●

WASHINGTON MILK PRICES

An all-time high for the Washington, D. C. area was assured for the first part of this fall when the Board of Directors of the Maryland-Virginia Milk Producers Association voted to increase the price to dairies by 41c per cwt. This approximate 9/10ths cent per quart was immediately passed on to the consumer when all dairies in the area announced a 1c per quart increase in milk prices effective October 1.

The new price now becomes 23½ cents a quart for home delivery, 21c per quart in stores.

The Producers Association, which has a virtual monopoly on milk sales in the Nation's Capital and surrounding areas, said the increase was necessary because of the summer drought which had burned up most of the Maryland and Virginia pastures and because of a critical labor shortage in the area which required hiring more expensive labor or payment of overtime to present workers.

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